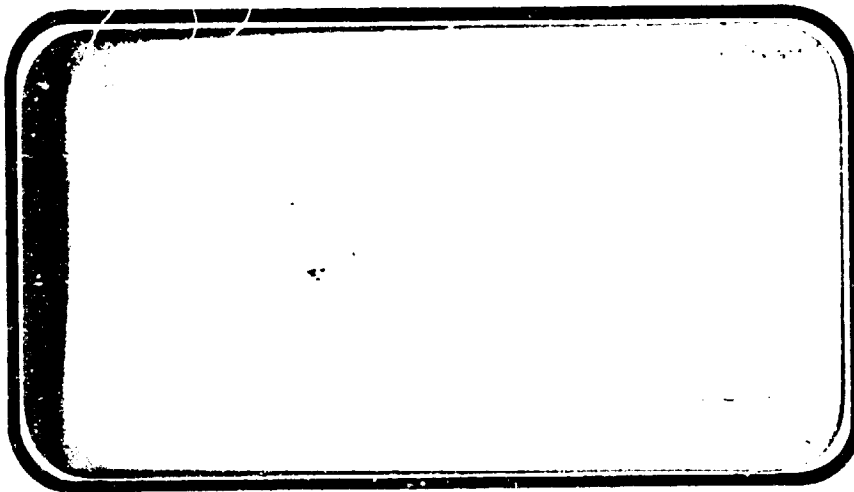


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NASA

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION



NASA-CR-128788) RESULTS OF TESTS IN THE
NSFC 14 X 14 INCH TRANSONIC WIND TUNNEL
ON A .004 SCALE MODEL OF THE ROCKWELL
INTERNATIONAL SPACE SHUTTLE (Chrysler
Corp.) 330 p HC \$18.50

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

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NASA CR - 128,788

RESULTS OF TESTS IN THE MSFC 14 x 14 INCH
TRANSONIC WIND TUNNEL ON A .004 SCALE MODEL
OF THE ROCKWELL INTERNATIONAL SPACE
SHUTTLE VEHICLE 3, (INTEGRATED CONFIGURATION)

By

E. C. Allen and Tom Hamilton, Rockwell International

Prepared under NASA Contract Number NAS9-13247

by

Data Management Services
Chrysler Corporation Space Division
New Orleans, La. 70189

for

Engineering Analysis Division
Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS

Test Number: MSFC 579-580
NASA Series No.: IA-37, IA-48
Date: July 10-16, 1973 (54 Occ. Hrs.)

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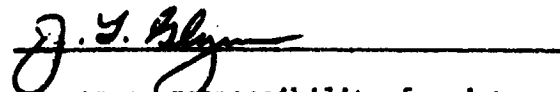
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This document has been reviewed and is approved for release.

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RESULTS OF TESTS IN THE MSFC 14 x 14 INCH TRISONIC
WIND TUNNEL ON A .004 SCALE MODEL OF THE
ROCKWELL INTERNATIONAL SPACE SHUTTLE VEHICLE 3,
(INTEGRATED CONFIGURATION)

By

E. C. Allen and Tom Hamilton, Rockwell International

ABSTRACT

Experimental aerodynamic investigations were conducted during mid-July, 1973 on a .004 scale model of the Rockwell International integrated configuration Space Shuttle Vehicle 3. The purpose of the tests was three fold: (1) to determine the static stability characteristics of the integrated vehicle, utilizing the Vehicle 3 orbiter configuration; (2) to determine the effect of interstage structure and tank external fuel lines on the integrated vehicle aerodynamic characteristics; (3) to determine the effects of the aft interstage structure on orbiter aerodynamic loads. Data were recorded on the integrated vehicle (test no. 579) at angles of attack and sideslip ranging from -10° to 10° over a Mach number schedule from 0.6 to 4.96. Data were obtained on the orbiter alone in the presence of the external tank with SRB attached (test no. 580) at angles of attack from -10° to 10° over a Mach number range from .6 to 1.96.

Plotted data are presented in the body axis system.

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Schedule of Coefficients Plotted:

- A) CN vs CLM
CN, CLM, CAF, CABO, CABS, CABT vs ALPHA
- B) CN vs CLM
CN, CLM, CAB, CAP vs ALPHA
- C) CY, CYN, CHL vs BETA
CY vs CYN
- D) CN vs CLM
CN, CLM, CAF, CABO, CABT vs ALPHA
- E) DCN/DA, DCIMDA, XAC, CNALFO, CIMAFO, CAFAFO, CABOAO,
CABTAG, CABSAB vs MACH
- F) DCN/DA, DCIMDA, XAC, CNALFO, CIMAFO, CAFAFO vs MACH
- G) DCN/DA, DCIMDA, XAC, CNALFO, CIMAFO, CAFAFO, CABOAO,
CABTAG vs MACH
- H) DCY/DB, DCYNDB, DCHLDB, YAC vs MACH

NOMENCLATURE General

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
a		speed of sound; m/sec, ft/sec
C_p	CP	pressure coefficient; $(p_1 - p_\infty)/q$
M	MACH	Mach number; V/a
p		pressure; N/m^2 , psf
q	$Q(NSM)$ $Q(PSF)$	dynamic pressure; $1/2\rho V^2$, N/m^2 , psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
ψ	PSI	angle of yaw, degrees
ϕ	PHI	angle of roll, degrees
ρ		mass density; kg/m^3 , slugs/ft ³

Reference & C.G. Definitions

A_b		base area; m^2 , ft^2
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
\bar{c}	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m^2 , ft^2
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
∞	free stream

NOMENCLATURE
(Continued)

Body-Axis System

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
C_N	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
C_A	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_{A_b}	CAB	base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(P_b - P_\infty)/qS$
C_{A_f}	CAF	forebody axial force coefficient; $C_A - C_{A_b}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS l_{REF}}$
C_n	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qS b}$
C_l	CEL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qS b}$

NOMENCLATURE (Concluded)

ADDITIONS TO STANDAPD LIST

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
C_A'	CAP	axial force coefficient corrected for balance cavity pressure effects
C_{ABO}	CABO	orbiter base axial force coefficient
C_{ABS}	CABS	solid rocket booster base axial force coefficient
C_{ABT}	CABT	external tank base axial force coefficient
$C_A'(\alpha=0)$	CAPAFO	axial force coefficient corrected for balance cavity pressure effects, at zero degrees angle of attack
$C_{AF}(\alpha=0)$	CAFAFO	forebody axial force coefficient at zero degrees angle of attack
$C_{ABO}(\alpha=0)$	CABOAO	orbiter base axial force coefficient at zero degrees angle of attack
$C_{ABS}(\alpha=0)$	CABSAO	solid rocket booster base axial force coefficient at zero degrees angle of attack
$C_{ABT}(\alpha=0)$	CABTAO	external tank base axial force coefficient at zero degrees angle of attack
$C_m(\alpha=0)$	CLMAFO	pitching moment coefficient at zero degrees angle of attack
$C_N(\alpha=0)$	CNALFO	normal force coefficient at zero degrees angle of attack
X_{AC}	XAC	longitudinal location of aerodynamic center with respect to reference c.g. $X_{AC} = -(dC_m/d\alpha)/(dC_N/d\alpha)$; positive X when a.c. aft of c.g.
Y_{AC}	YAC	longitudinal location of aerodynamic center with respect to reference c.g. $Y_{AC} = -(dC_n/d\beta)/(dC_y/d\beta)$; positive X when a.c. aft of c.g.
$C_{N\alpha}$	DCN/DA	derivative of normal force coefficient with respect to alpha, ($\alpha = \pm 7^\circ$); per degree

NOMENCLATURE (Concluded)

ADDITIONS TO STANDARD LIST

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
C_{m_α}	DCLMDA	derivative of pitching moment coefficient with respect to Alpha, (Alpha = $\pm 7^\circ$); per degree
C_{Y_β}	DCY/DB	derivative of side force coefficient with respect to Beta, (Beta = $\pm 7^\circ$); per degree
C_{n_β}	DCYNDB	derivative of yawing moment coefficient with respect to Beta, (Beta = $\pm 7^\circ$); per degree, body axis system
C_{l_β}	DCHLDB	derivative of rolling moment coefficient with respect to Beta, (Beta = $\pm 7^\circ$); per degree, body axis system

CONFIGURATIONS INVESTIGATED

For the integrated vehicle testing (test no. 579) the external tank was mounted on the 232 balance which was supported by the number 3 balance adapter and sting. The orbiter was mounted to the tank at three points simulating the forward attach point and the two main fuel lines at the rear attach point. The SRB's were also rigidly attached to the tank. (See figures 2 thru 6.)

When testing the orbiter in the presence of the tank and booster (test No. 580) the dual sting support system was used as shown in figure 7. The orbiter was mounted on the 231 balance supported by the upper sting. The tank was mounted on a dummy balance supported by the lower sting. The two SRB's were rigidly attached to the tank.

Base pressures were monitored at the six locations shown in figure 8. during test no. 579. Since only three data channels were available for pressure measurements, the three tubes monitoring the orbiter were "teed" together, as were the two tubes at the base of the external tank. Thus, three base pressures were recorded; an averaged pressure for the orbiter, an averaged pressure for the external tank, and the base pressure of one SRB.

For test no. 580 only orbiter average base pressure was recorded.

The orbiter model Vehicle 3 configuration consisted of the following components:

B19	Body
C7	Canopy
F5	Body Flap
M4	OMS pods

W107	Wing
E23	Elevon
V7	Vertical tail
R5	Rudder

The external tank, solid rocket motors and interstage structures were not broken into subassemblies and carried the following designations:

T9	External Tank
T14	External Tank with external fuel lines
S12	Solid Rocket Motor
U6	Aft interstage structure between orbiter, tank and solid rocket motors
U7	Aft interstage structure between orbiter and tank.

Pertinent dimensions for all the model components are given in Table III.

The speed brake and rudder deflections were 0 for both tests.

The tunnel conditions existing during the test are delineated in Table I. Table II summarizes the model configurations tested and identifies the run number grouping for data set formation.

TEST FACILITY DESCRIPTION

The Marshall Space Flight Center 14" x 14" Transonic Wind Tunnel is an intermittent blowdown tunnel which operates by high pressure air flowing from storage to either vacuum or atmospheric conditions. A Mach number range from .2 to 5.85 is covered by utilizing two interchangeable test sections. The transonic section permits testing at Mach 0.20 through 2.50, and the supersonic section permits testing at Mach 2.74 through 5.85. Mach numbers between .2 and .9 are obtained by using a controllable diffuser. The range from .95 to 1.3 is achieved through the use of plenum suction and perforated walls. Mach numbers of 1.44, 1.93 and 2.50 are produced by interchangeable sets of fixed contour nozzle blocks. Above Mach 2.50 a set of fixed contour nozzle blocks are tilted and translated automatically to produce any desired Mach number in .25 increments.

Air is supplied to a 6000 cubic foot storage tank at approximately -40°F dew point and 500 psi. The compressor is a three-stage reciprocating unit driven by a 1500 hp motor.

The tunnel flow is established and controlled with a servo actuated gate valve. The controlled air flows through the valve diffuser into the stilling chamber and heat exchanger where the air temperature can be controlled from ambient to approximately 180°F. The air then passes through the test section which contains the nozzle blocks and test region.

Downstream of the test section is a hydraulically controlled pitch sector that provides a total angle of attack range of 20° ($\pm 10^\circ$). Sting offsets are available for obtaining various maximum angles of attack up to 90°.

DATA REDUCTION

All model aerodynamic forces and moments were reduced to coefficient form in the body axis system utilizing the following reference dimensions:

$$S_{REF} = \text{orbiter wing planform area} = 6.198 \text{ in.}^2$$

$$l_{REF} = b_{REF} = \text{orbiter body length} = 5.160 \text{ inches}$$

Moments were about a reference center of gravity which was located 2.720 inches aft of the external tank nose on the ET centerline (see figure 2). This held true for both tests (#579 and #580).

For test #579, which measured integrated vehicle loads, base pressures were measured on all three vehicle components-orbiter, external tank, and solid rocket booster-and utilized to correct the balance-measured axial force to an axial force that assumed freestream static pressure acting on the respective base areas. Due to a slanted base the normal force was also corrected. The appropriate equations and base area were

$$CAF = CA - CABO - CABT - CABS$$

$$CN = CNU - CNBO$$

where:

$$CAF = \text{forebody axial force coefficient}$$

$$CA = \text{balance measured axial force coefficient}$$

$$CABO = -C_{PB0} (A_{B0}/S_{REF}) \cos i_B$$

$$CABT = -C_{PB_T} (A_{B_T}/S_{REF})$$

$$CABS = -C_{PB_S} (A_{B_S}/S_{REF})$$

$$CNU = \text{balance measured normal force coefficient}$$

$$CNBO = -C_{PB0} (A_{B0}/S_{REF}) \sin i_B$$

and

$$C_{PB_0} = \text{orbiter average base pressure coefficient } [(p_{B_{0\text{avg}}} - p_{\infty})/(q)]$$

$$C_{PB_T} = \text{external tank average base pressure coefficient} \\ [(p_{B_{T\text{avg}}} - p_{\infty})/(q)]$$

$$C_{PB_S} = \text{solid rocket booster pressure coefficient } [(p_{B_S} - p_{\infty})/(q)]$$

$$A_{B_0} = \text{orbiter base area} = 0.9857 \text{ in.}^2$$

$$A_{B_T} = \text{external tank base area} = 1.319 \text{ in.}^2$$

$$A_{B_S} = \text{solid rocket booster base area (2)} = 0.9265 \text{ in.}^2$$

$$i_B = \text{orbiter base slant angle} = 12^\circ$$

For test #580 which recorded orbiter forces and moments only the orbiter average base pressure was measured and utilized to correct axial force in accordance with established procedures. The equations utilized were:

$$C_{AF} = C_A - C_{AB}$$

$$C_A' = C_{AF} - C_{PB_0} (A_{B_0}/S_{REF})$$

where:

$$C_{AB} = -C_{PB_0} [(A_{B_0} - A_{C_0})/(S_{REF})] - C_{PC_0} (A_{C_0}/S_{REF})$$

and:

$$A_{C_0} = \text{orbiter balance cavity area} = 0.3167 \text{ in.}^2$$

$$C_{PC_0} = [(p_c - p_{\infty})/(q)]$$

TABLE I.

TEST CONDITIONS
TEST IA37 (TWT-579)

MACH NUMBER	REYNOLDS NUMBER per unit length	DYNAMIC PRESSURE (pounds/sq. inch)	TOTAL PRESSURE (psi)	TOTAL TEMPERATURE (°F)
0.6	5.0 x 10 ⁶	4.35	22	100
0.8	5.9	6.47	22	100
0.9	6.2	7.37	22	100
1.0	6.5	8.14	22	100
1.10	6.6	8.73	22	100
1.20	6.7	9.29	22	100
1.46	6.5	9.47	22	100
1.96	7.0	10.24	28	100
2.99	4.0	5.19	30	140
3.50	6.2	6.74	60	140
4.96	4.8	3.07	90	140

BALANCE UTILIZED: MSFC 232

CAPACITY:

NF 300 lbs.
 SF 143 lbs.
 AF 50 lbs.
 PM 400 in.-lbs.
 YM 192 in.-lbs.
 RM 100 in.-lbs.

ACCURACY:

±1.50 lbs.
±0.72 lbs.
±0.25 lbs.
±2.00 in.-lbs.
±0.96 in.-lbs.
±0.50 in.-lbs.

COEFFICIENT

TOLERANCE: at $q = 10 \text{ lbs./in.}^2$

±0.024
±0.012
±0.004
±0.006
±0.003
±0.002

COMMENTS: Accuracy based on $\pm 0.5\%$ of balance capacity.

[illegible]

TABLE II. (Continued)

[illegible]

CAP - C_A' = CORRECTED AXIAL FORCE COEFFICIENT

TABLE III. - MODEL DIMENSIONAL DATA SHEETS

MODEL COMPONENT: BODY B19

GENERAL DESCRIPTION: Fuselage, 3 configuration, Lightweight
Orbiter per VL70-000139B

NOTE: Identical to B17 except forebody

Model Scale = 0.004

DRAWING NUMBER

VL70-000139B

DIMENSION:

FULL SCALE

MODEL SCALE

Length ~ IN.

1290.3

5.16120

Max Width ~ IN.

267.6

1.07040

Max Dep h ~ IN.

244.5

0.9780

Fineness Ratio

4.82175

4.82175

Area ~ ft²

Max Cross-Sectional

386.67

0.00619

Planform

Wetted

Base

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: Canopy - C7

GENERAL DESCRIPTION: Configuration 3 per Rockwell Lines

VL 70-000139

Model Scale = .004

DRAWING NUMBER VL70-000139

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length ($x_o = 433$ to $x_o = 670$) in.FS	<u>237</u>	<u>0.9480</u>
Max Width	<u> </u>	<u> </u>
Max Depth ($B_o =$ to $B_o = 501$) in.FS	<u> </u>	<u> </u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: F5 Body Flap

GENERAL DESCRIPTION: 3 configuration per Rockwell lines

VL70-000139

Scale Model = 0.004

DRAWING NUMBER

VL70-000139

DIMENSION:

FULL SCALE

MODEL SCALE

Length ~ IN.

84.70

0.33880

Max Width ~ IN.

267.6

1.07040

Max Depth

Fineness Ratio

Area ~ Ft²

Max Cross-Sectional

Planform

Wetted

Base

142.5195

0.00228

38.0958

0.15238

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: OMS Pod - M4

GENERAL DESCRIPTION: 3 Lightweight configuration per Rockwell
Lines VL70-000139

Scale Model = 0.004

DRAWING NUMBER VL70-000139

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length ~ IN.	<u>346.0</u>	<u>1.3840</u>
Max Width ~ IN.	<u>108.0</u>	<u>0.4320</u>
Max Depth ~ IN.	<u>113.0</u>	<u>113.0</u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

D of OMS Pod

WP = 463.9 INFS: $WP400 + 63.9 = 463.9$

BP = 80.0 INFS

Length 1214.0 to 1560.0 = 346.0 INFS

NOTE: M4 identical to M3 of 2A configuration except
intersection to body

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)
 MODEL COMPONENT: WING-W 107 New Lightweight Orbiter

GENERAL DESCRIPTION: Orbiter 3 configuration per lines VL70-000139E.

NOTE: Same as W103 except cuff, airfoil, and angle of incidence

Scale Model = 0.004

TEST NO.	DWG. NO. VL70-000139	
DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.) Ft^2	2690.00	0.04304
Planform	936.68	3.74672
Span (Theo In.	2.265	2.265
Aspect Ratio	1.177	1.177
Rate of Taper	0.200	0.200
Taper Ratio	3.500	3.500
Dihedral Angle, degrees	0.500	0.500
Incidence Angle, degrees	+3.000	+3.000
Aerodynamic Twist, degrees		
Sweep Back Angles, degrees	45.000	45.000
Leading Edge	-10.24	-10.24
Trailing Edge	35.209	35.209
0.25 Element Line		
Chords:		
Root (Theo) B.P.O.O.	689.24	2.75696
Tip, (Theo) B.P.	137.85	0.55140
MAC	474.81	1.89924
Fus. Sta. of .25 MAC	1136.89	4.54756
W.P. of .25 MAC	299.20	1.19680
B.L. of .25 MAC	182.13	0.72852
EXPOSED DATA		
Area (Theo) Ft^2	1752.29	0.02804
Span, (Theo) In. BP108	720.68	2.88272
Aspect Ratio	2.058	2.058
Taper Ratio	0.2451	0.2451
Chords		
Root BP108	562.40	2.2496
Tip 1.00 $\frac{b}{2}$	137.85	0.55140
MAC	393.03	1.57212
Fus. Sta. of .25 MAC	1185.31	4.74124
W.P. of .25 MAC	300.20	1.20080
B.L. of .25 MAC	251.76	1.00704
Airfoil Section (Rockwell Mod NASA)		
XXXX-64		
Root $\frac{b}{2}$.10	.10
Tip $\frac{b}{2}$.12	.12
Data for (1) of (2) Sides		
Leading Edge Cuff		
Planform Area Ft^2	118.333	0.00189
Leading Edge Intersects Fus M. L. @ Sta	500	2.0
Leading Edge Intersects Wing @ Sta	1083.4	4.3336

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: Elevon E-23GENERAL DESCRIPTION: 3 configuration per W107 Rockwell linesVL70-000139B data for (1) of (2) sidesScale Model = 0.004DRAWING NUMBER: VL70-000139B

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area ~ FT^2	<u>205.52</u>	<u>0.003288</u>
Span (equivalent) ~ IN.	<u>353.34</u>	<u>1.41336</u>
Inb'd equivalent chord	<u>114.78</u>	<u>0.45912</u>
Outb'd equivalent chord	<u>55.00</u>	<u>0.220</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>.208</u>	<u>.208</u>
At Outb'd equiv. chord	<u>.400</u>	<u>.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>0.00</u>	<u>0.00</u>
Tailing Edge	<u>-10.24</u>	<u>-10.24</u>
Hingeline	<u>0.00</u>	<u>0.00</u>
Area Moment (Normal to hinge line) ~ FT^3	<u>1548.07</u>	<u>0.00010</u>
Product of Area Moment		

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: VERTICAL - V 7 (Lightweight orbiter configuration)GENERAL DESCRIPTION: Centerline vertical tail, double wedge airfoil
with rounded leading edge

Scale Model = .004

DRAWING NUMBER:

VL70-0000139
VL70-000095DIMENSIONS:FULL-SCALEMODEL SCALETOTAL DATA

Area (Theo) ~ Ft ²	<u>425.92</u>	<u>0.00682</u>
Planform		
Span (Theo) ~ In.	<u>315.72</u>	<u>1.26288</u>
Aspect Ratio	<u>1.675</u>	<u>1.675</u>
Rate of Taper	<u>0.507</u>	<u>0.507</u>
Taper Ratio	<u>.404</u>	<u>.404</u>
Sweep Back Angles, degrees		
Leading Edge	<u>45.000</u>	<u>45.000</u>
Trailing Edge	<u>26.249</u>	<u>26.249</u>
0.25 Element Line	<u>41.130</u>	<u>41.130</u>
Chords:		
Root (Theo) WP	<u>268.50</u>	<u>1.0740</u>
Tip (Theo) WP	<u>108.47</u>	<u>0.43388</u>
MAC	<u>199.81</u>	<u>0.79924</u>
Fus. Sta. of .25 MAC	<u>1463.50</u>	<u>5.8540</u>
W. B. of .25 MAC	<u>635.522</u>	<u>2.542088</u>
B. L. of .25 MAC	<u>0.00</u>	<u>0.00</u>
Airfoil Section		
Leading Wedge Angle Deg	<u>10.000</u>	<u>10.000</u>
Trailing Wedge Angle Deg	<u>14.920</u>	<u>14.920</u>
Leading Edge Radius ~IN.	<u>2.00</u>	<u>0.0080</u>
Void Area	<u>13.17</u>	<u>0.00021</u>
Blanketed Area		

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: R5 - RudderGENERAL DESCRIPTION: 2A and 3 configuration per Rockwell linesVL70-000095 and VL70-000139Scale Model = .004DRAWING NUMBER: VL70-000139
VL70-000095

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area ~ Ft ²	<u>106.38</u>	<u>0.00170</u>
Span (equivalent) ~ IN.	<u>201.0</u>	<u>0.8040</u>
Inb'd equivalent chord	<u>91.585</u>	<u>0.36634</u>
Outb'd equivalent chord	<u>50.833</u>	<u>0.20333</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>34.83</u>	<u>34.83</u>
Tailing Edge	<u>26.25</u>	<u>26.25</u>
Hingeline	<u>34.83</u>	<u>34.83</u>
Area Moment (Normal to hinge line) Ft ³	<u>526.13</u>	<u>0.00003</u>
Product of area and mean chord		

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: External Tank T9

GENERAL DESCRIPTION: 2A Configuration Per NR Lines VL78-000018 and VL72-0000618;
Body of Revolution

Scale Model = .004

DRAWING NUMBER: VL78-000018

<u>DIMENSIONS:</u>	<u>THEORETICAL</u>		<u>ACTUAL MEASURED</u>
	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>	<u>MODEL SCALE</u>
Length	<u>1826.00</u>	<u>7.304</u>	<u> </u>
Max. Width	<u>324.00</u>	<u>1.296</u>	<u> </u>
Max. Depth	<u> </u>	<u> </u>	<u> </u>
Fineness Ratio	<u>6.13889</u>	<u>6.13889</u>	<u> </u>
Area			
Max. Cross-Sectional	<u>572.555</u>	<u>0.00916</u>	<u> </u>
Planform	<u> </u>	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>	<u> </u>
Base	<u>572.555</u>	<u>0.00916</u>	<u> </u>

REF

FS (Orbiter) 0.00 = TANK Station 635.0 INFS

WP (ET) = 400 - 344.413 = 55.587 INFS

BP (Orbiter) 0.00 = 0.00 ET

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: EXTERNAL TANK - T₁₄

GENERAL DESCRIPTION: _____

NOTE: T₁₄ identical to T₉ but with external fuel lines added.

Model Scale = 0.004

DRAWING NUMBER: VL78-000018

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length - IN.	<u>1858</u>	<u>7.432</u>
Max. Width (Dia) - IN.	<u>324.0</u>	<u>1.296</u>
Max. Depth	<u> </u>	<u> </u>
Fineness Ratio - L/D	<u>5.73457</u>	<u>5.73457</u>
Area - FT ²		
Max. Cross-Sectional	<u>572.56</u>	<u>0.009161</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: BOOSTER SOLID ROCKET MOTOR - S12GENERAL DESCRIPTION: Configuration 3A, Data for (1) of (2)
sides, per Rockwell Lines VL77-000036AModel Scale = 0.004DRAWING NUMBER: VL72-000088A
VL77-000036A

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length (Includes Nozzle) - IN.	<u>1741.0</u>	<u>6.9640</u>
Max. Width (Tank Dia) - IN.	<u>142.3</u>	<u>0.5692</u>
Max. Depth (Aft Shroud) - IN.	<u>192.0</u>	<u>0.7680</u>
Fineness Ratio	<u>9.06771</u>	<u>9.06771</u>
• Area - FT ²		
Max. Cross-Sectional	<u>201.06193</u>	<u>0.00322</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>
WP of BSRM Centerline (Z_T) - IN.	<u>400</u>	<u>1.6000</u>
FS of BSRM Nose (X_T) - IN.	<u>200</u>	<u>0.8000</u>

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: - U6 Interstage Structure

GENERAL DESCRIPTION: The aft tie-downs that support the SRBs
and the orbiter on the external tank.

Scale Model = 0.004

DRAWING NUMBER: VL72-000061

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
	<u> </u>	<u> </u>
	<u> </u>	<u> </u>
Max. Depth	<u> </u>	<u> </u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Concluded)

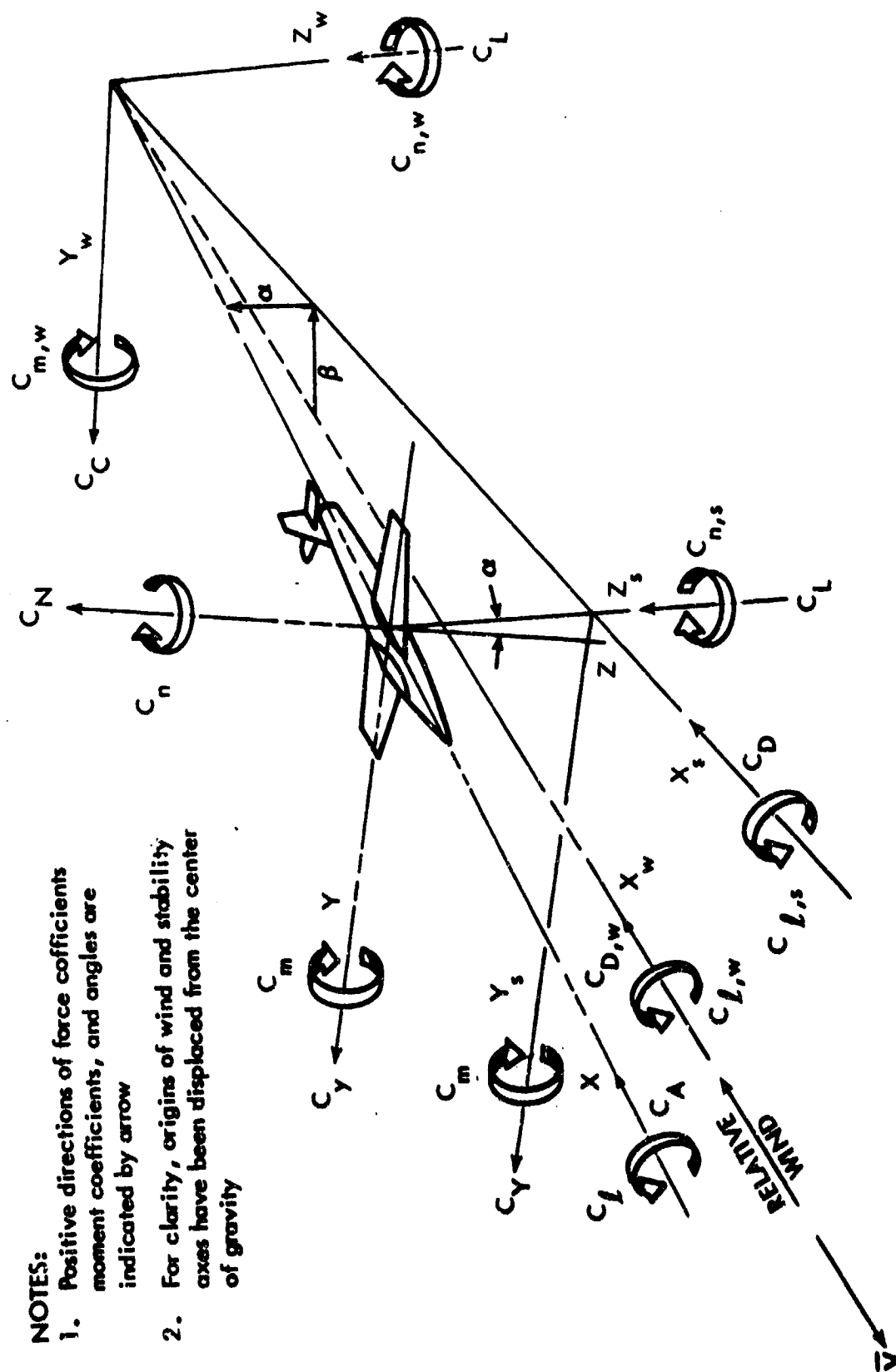
MODEL COMPONENT: U7 Interstage Structure

GENERAL DESCRIPTION: The aft tie-downs that support the orbiter
on the external tank.

Scale Model = 0.004

DRAWING NUMBER: VL72-000061

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
	<u> </u>	<u> </u>
	<u> </u>	<u> </u>
Max. Depth	<u> </u>	<u> </u>
Fineness Ratio	<u> </u>	<u> </u>
Area		
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>



- NOTES:
1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrow
 2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

FIGURE 1. - Axis Systems

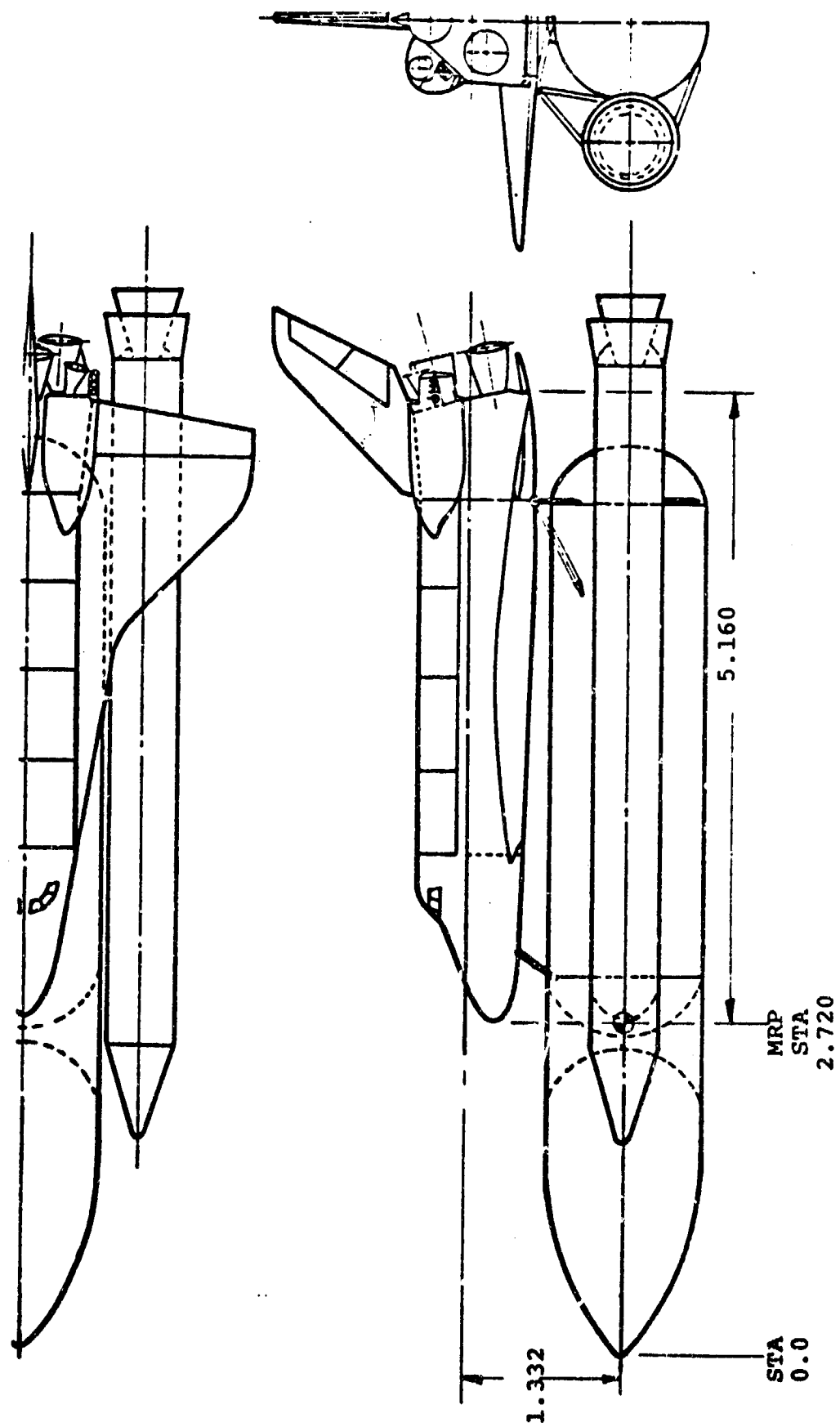


FIGURE 2. - General Arrangement of the Integrated Vehicle Model

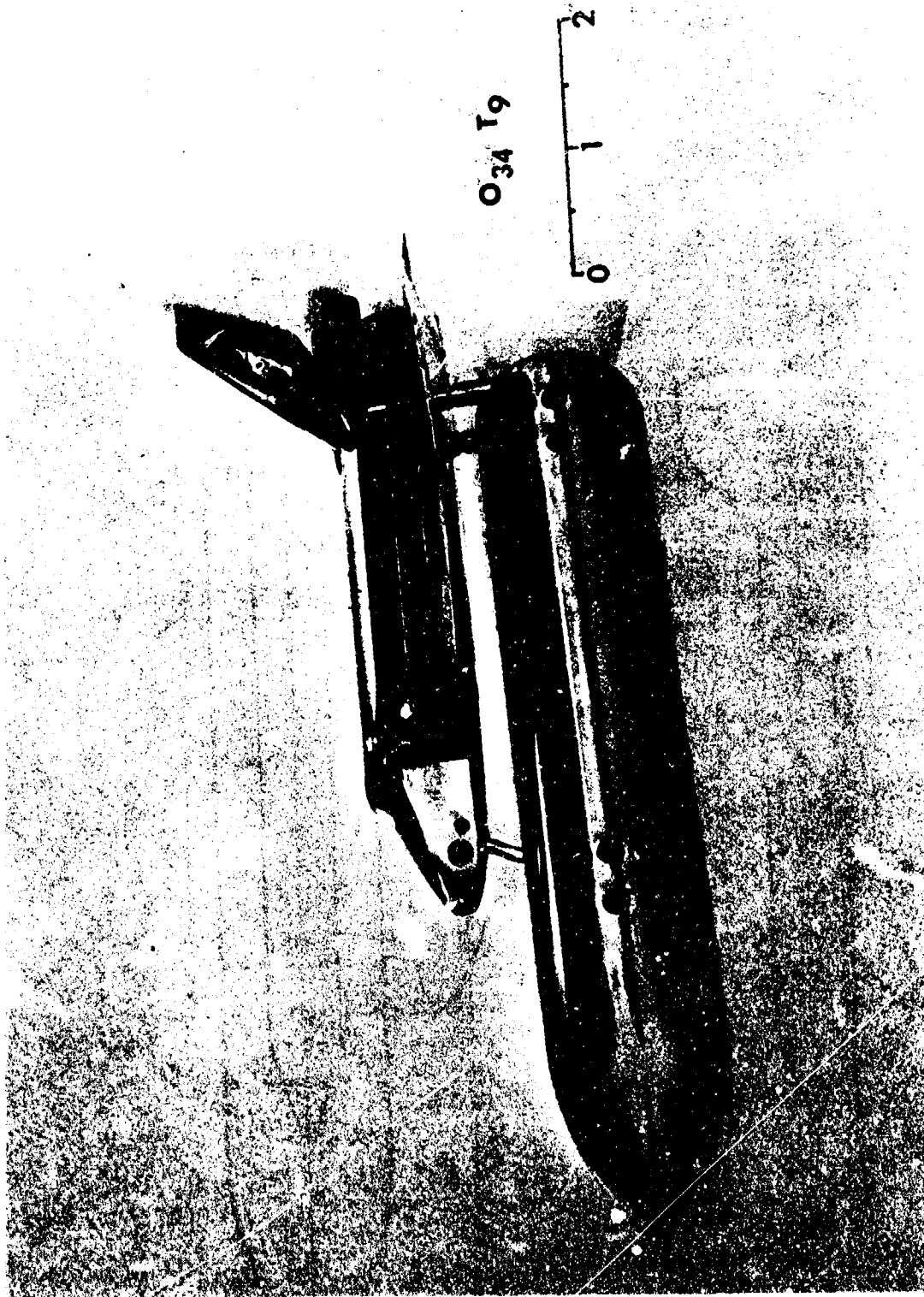


FIGURE 3. - Photograph of Configuration O34 T9



FIGURE 4. - Photograph of Configuration 034T9S12

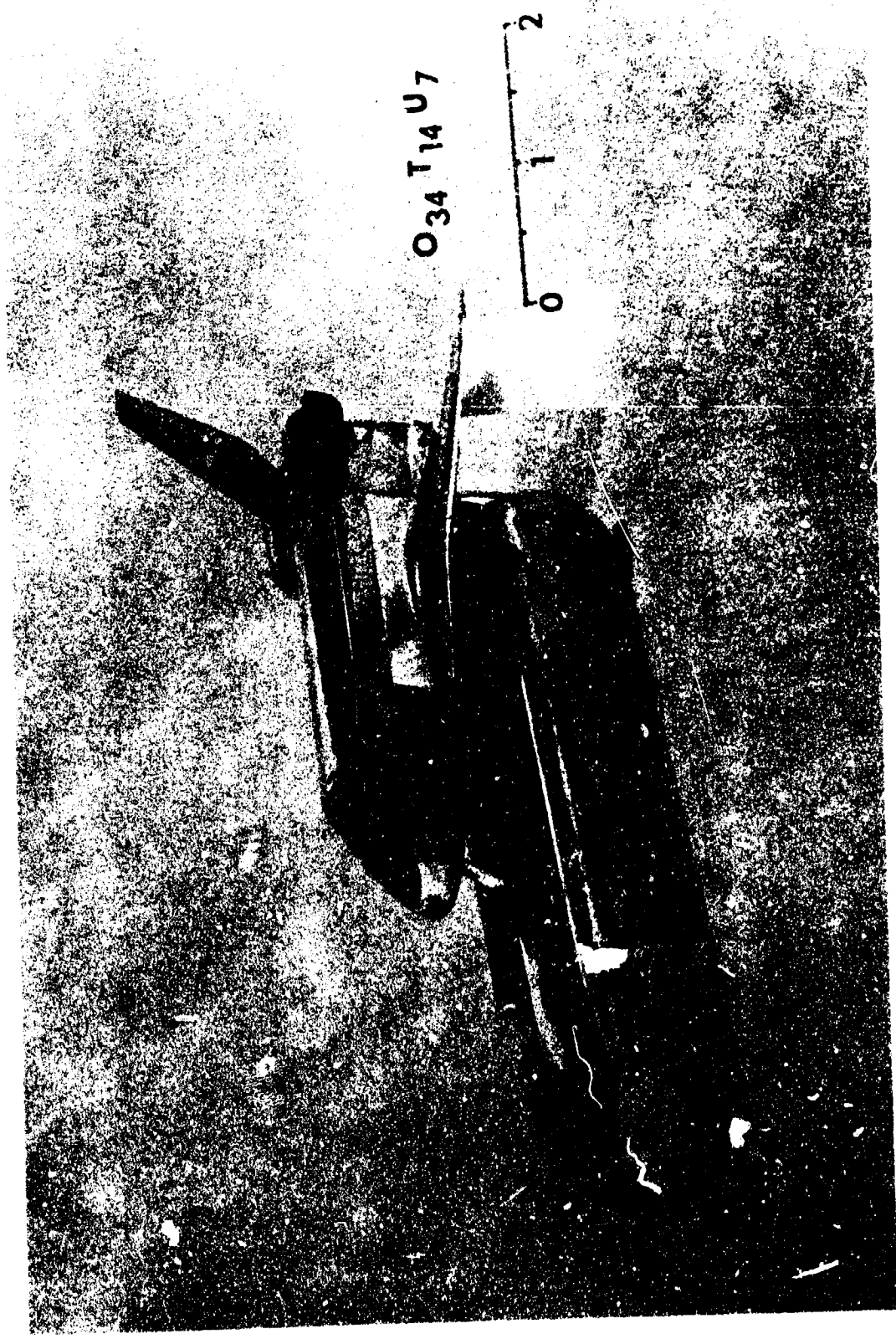
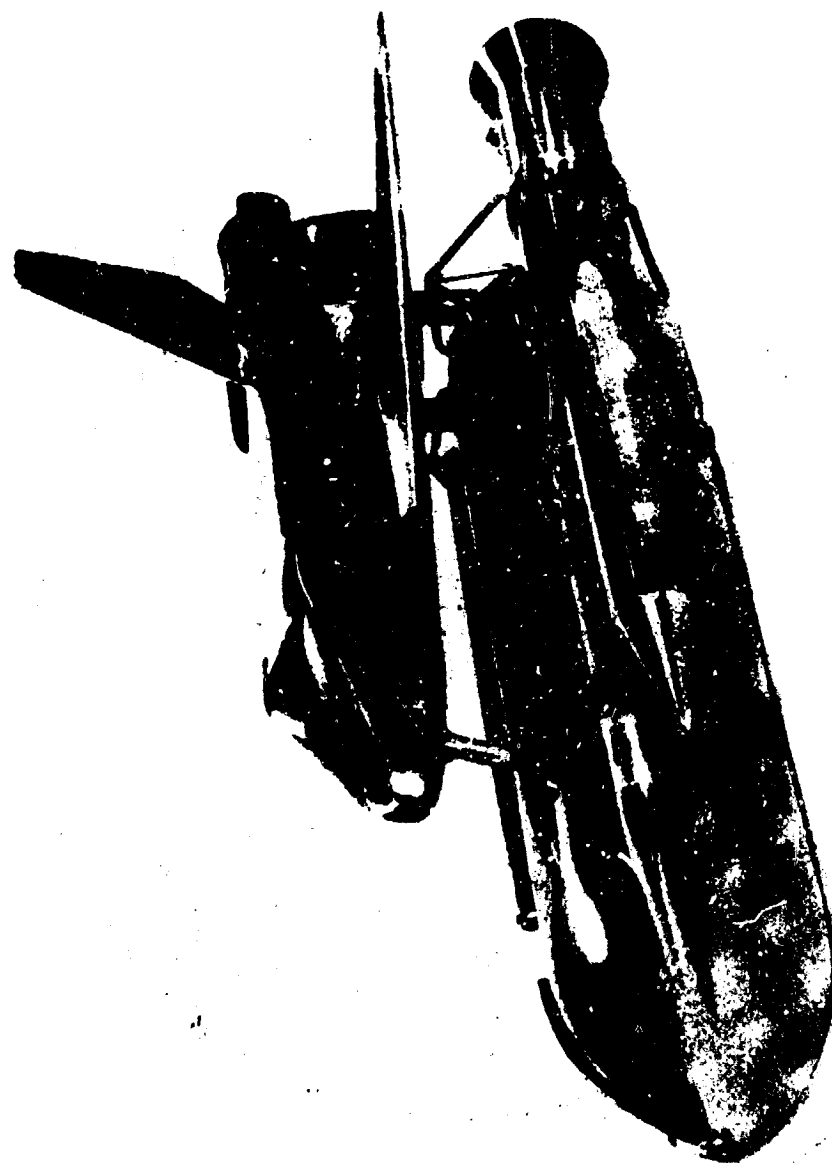


FIGURE 5. - Photograph of Configuration O34T14U7



$O_{34} T_{14} S_{12} U_6$



FIGURE 6. Photograph of Configuration $O_{34}T_{14}S_{12}U_6$

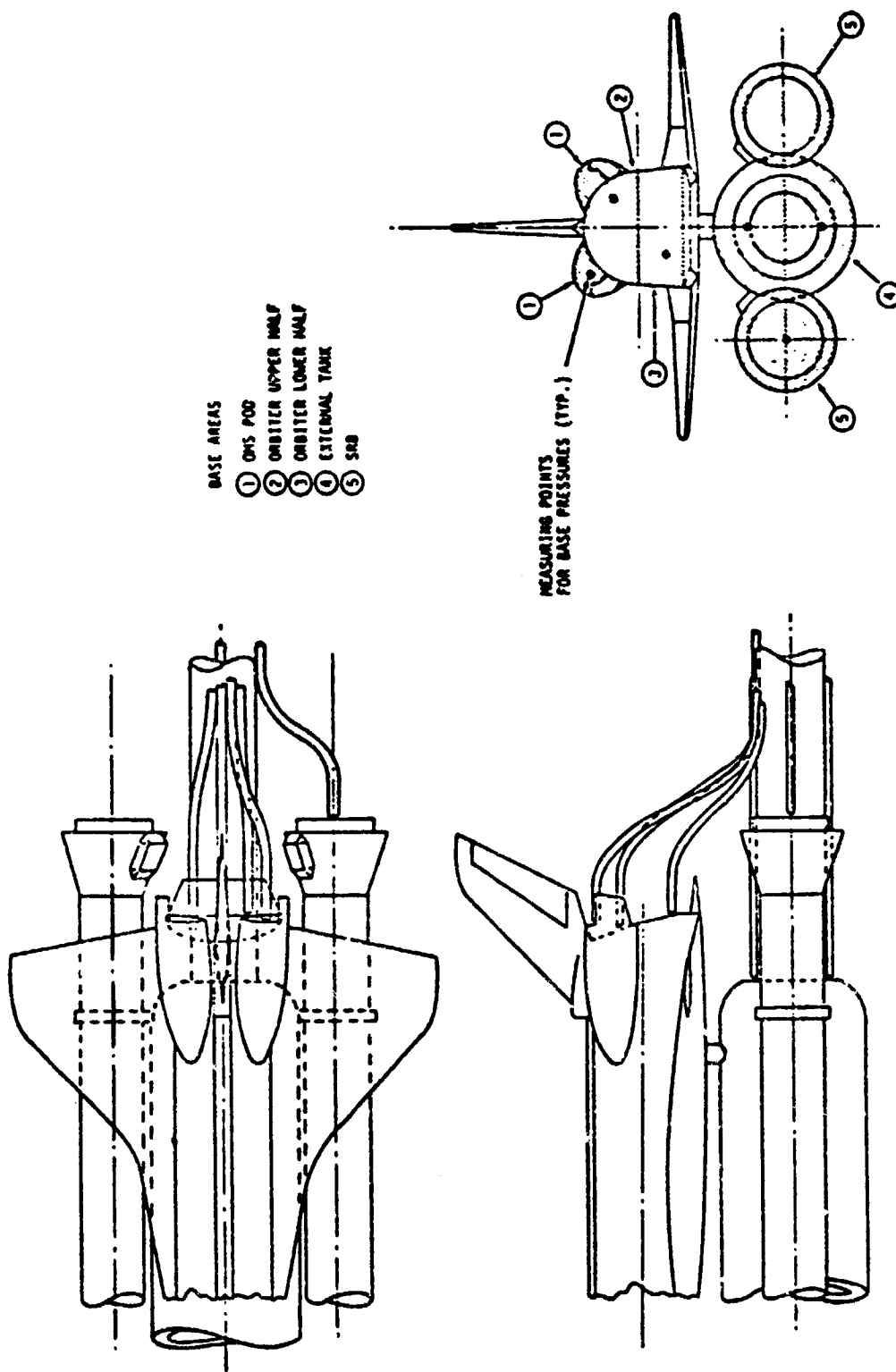


Figure 8. - Base Pressure Measuring Tube Locations.



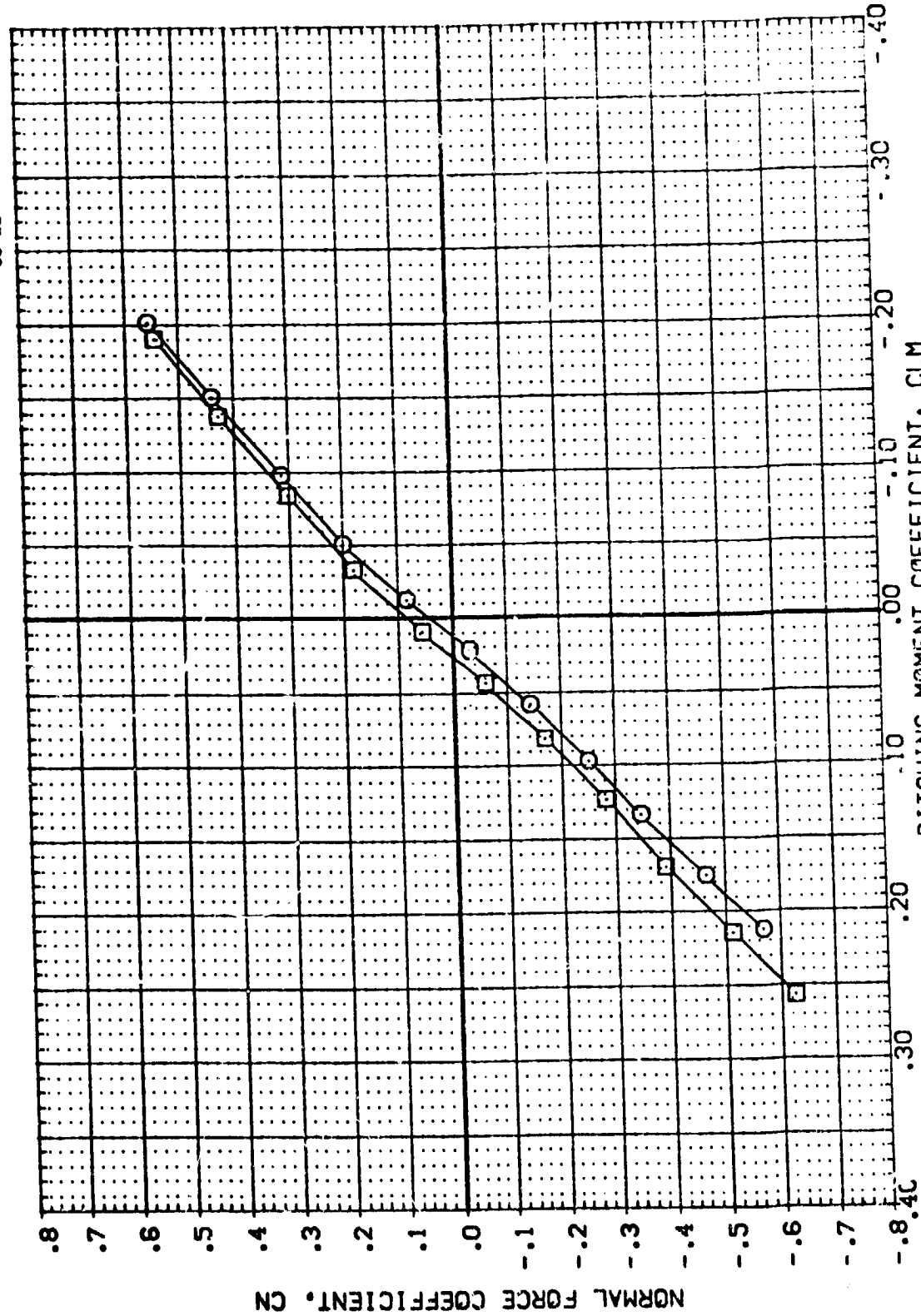
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BETA: .000 .000

ORIGIN: .000 .000

REFERENCE INFORMATION:

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BREF	5.1600	IN.
XPRP	2.7200	IN.
YPRP	.0000	IN.
ZPRP	.0000	IN.
SCALE	.0040	



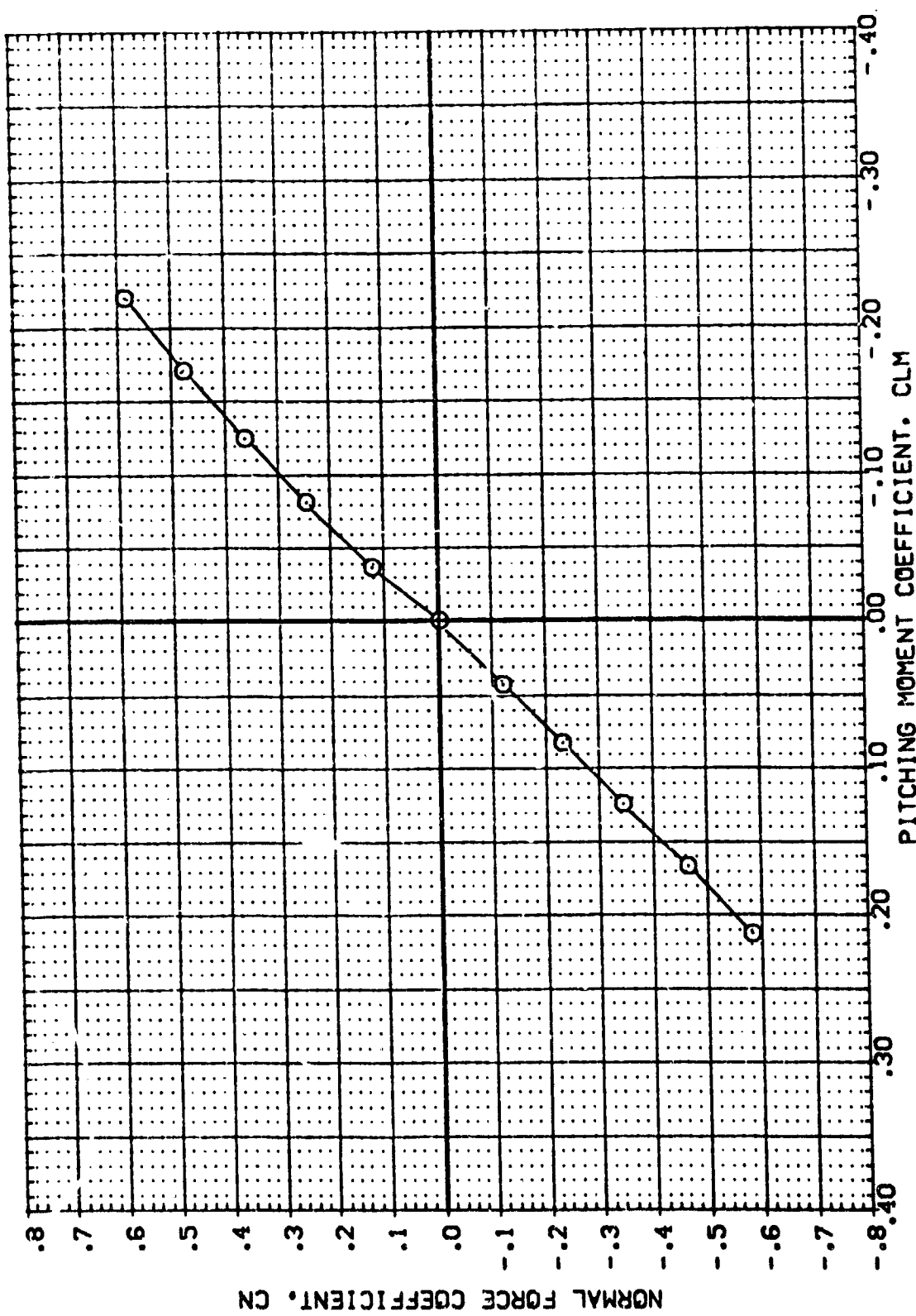
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(A)MACH = .60

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 (898007) ☐ DATA NOT AVAILABLE

BETA ORBING
 .000 .000
 .000 .000

REFERENCE INFORMATION
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 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

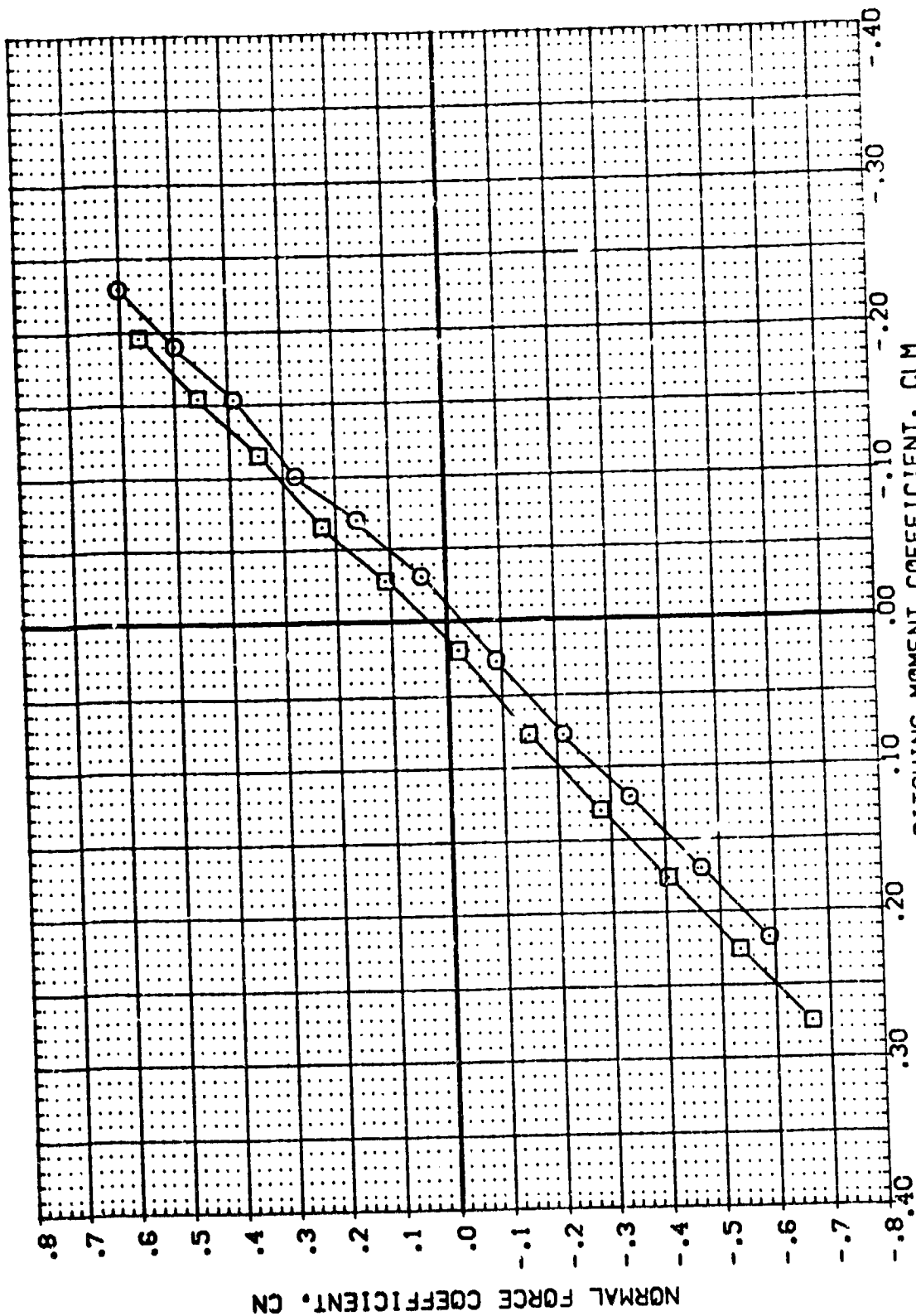
(8)HACH = .80



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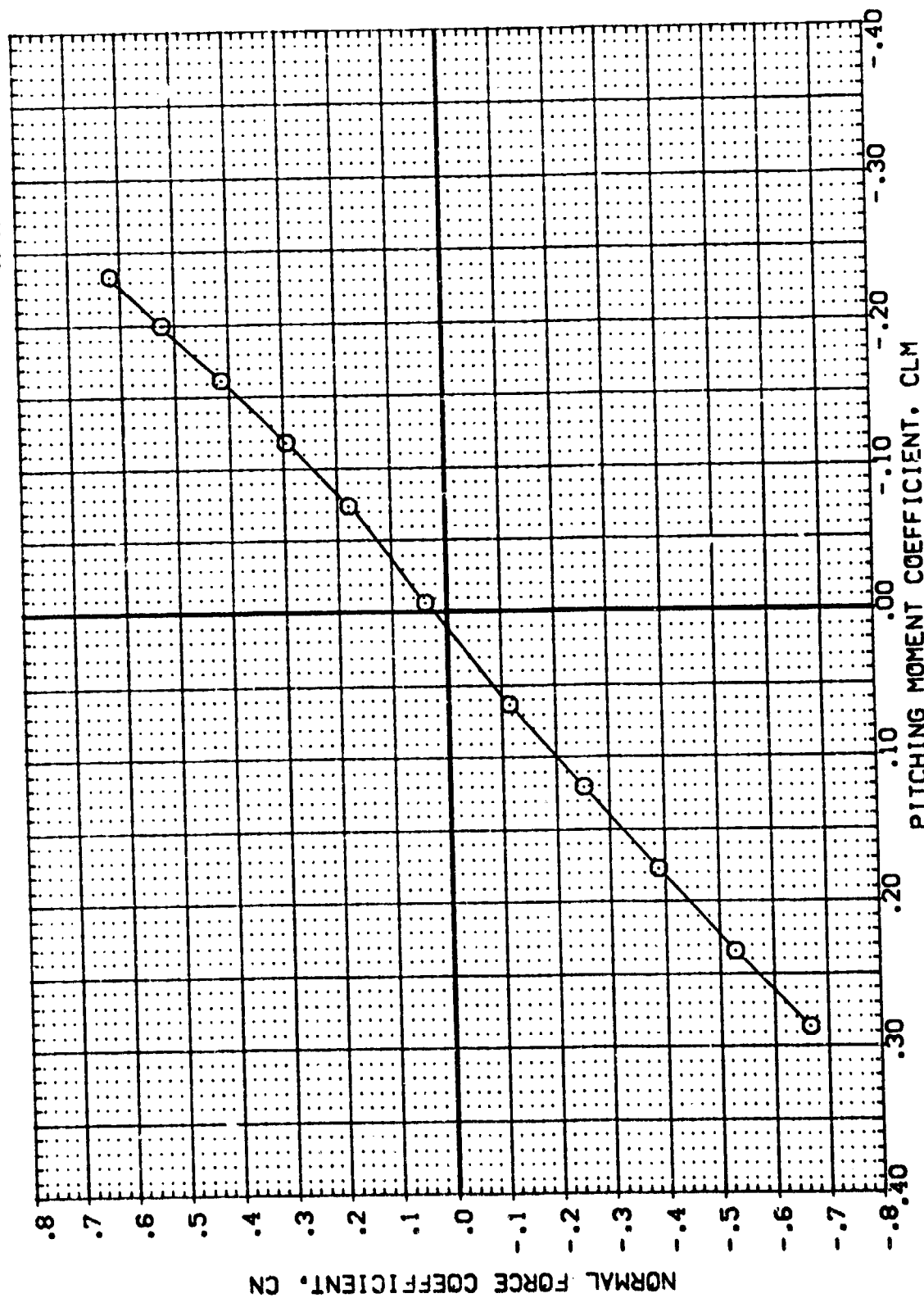
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 YREF: .0000 IN.
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 SCALE: .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

REFERENCE INFORMATION	
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LREF	5.1500 IN.
SREF	5.1600 IN.
XREF	2.7200 IN.
YREF	.0000 IN.
ZREF	.0000 IN.
SCALE	.0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

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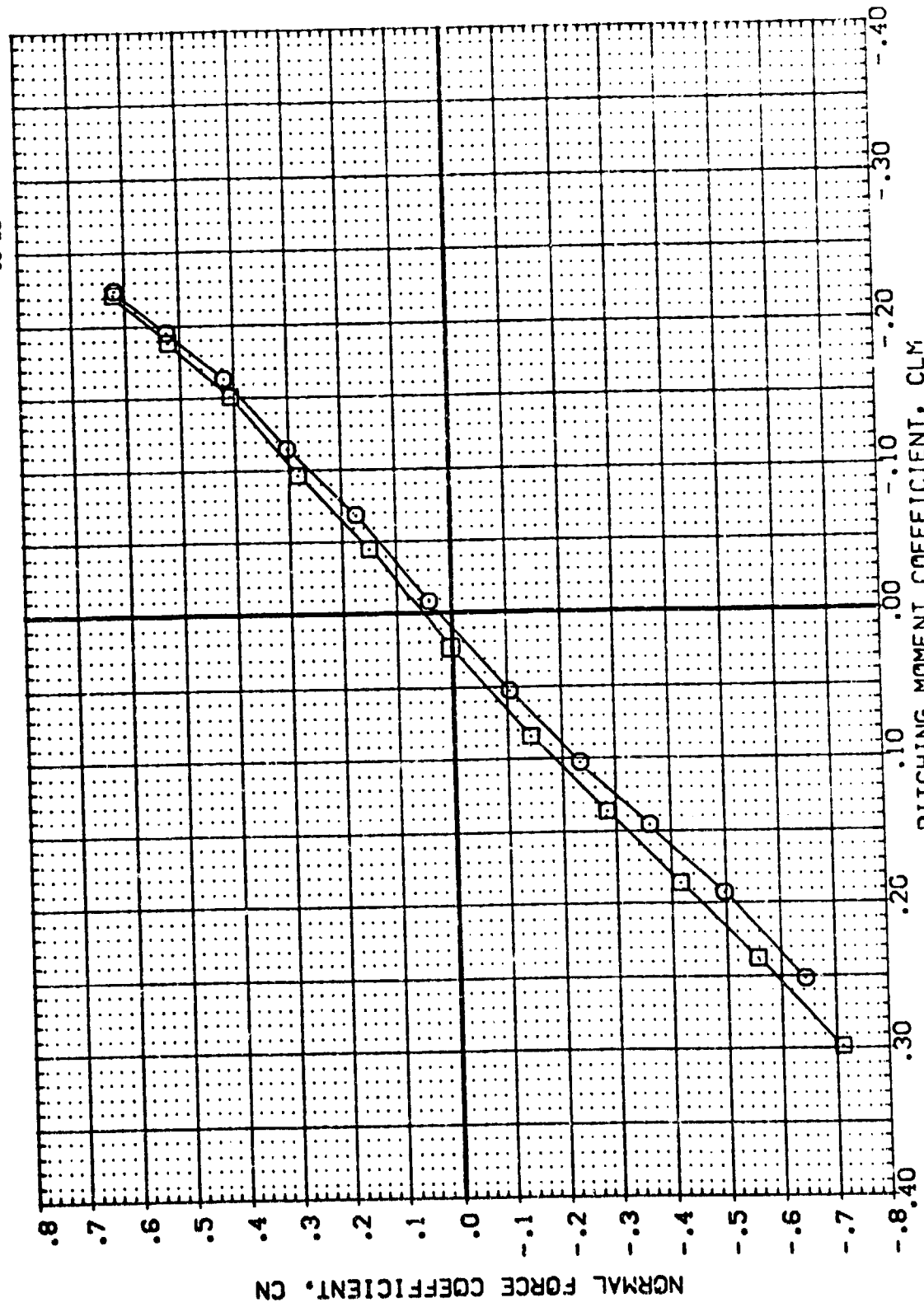
CD)MACH = 1.00

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REFERENCE INFORMATION
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 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBINC
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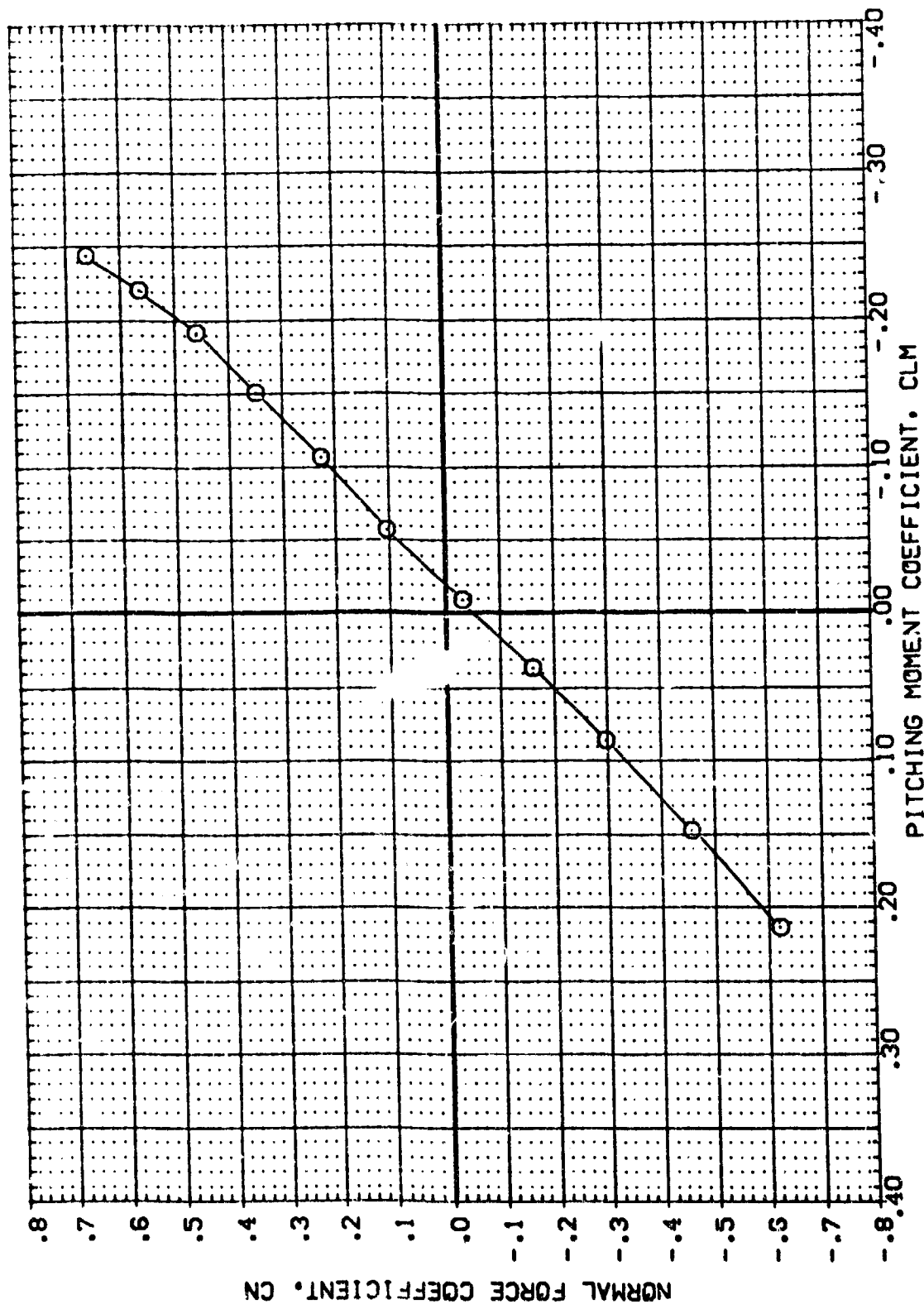


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

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BETA .000
 ORG INC .000
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 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0340



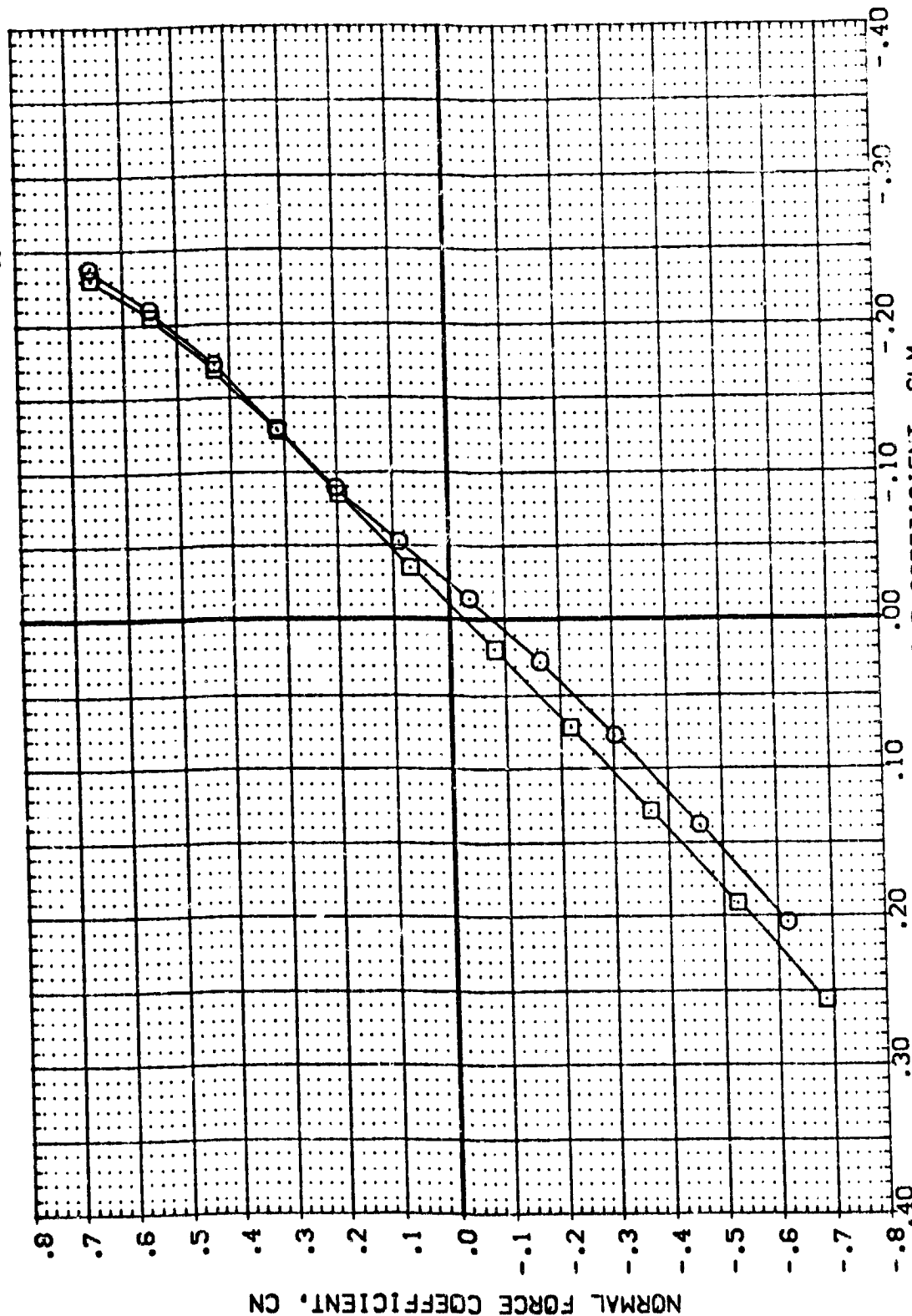
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(F)MACH = 1.20

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 LREF 5.1600 IN.
 BREF 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040


BETA ORBING
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DATA SET SYMBOL CONFIGURATION DESCRIPTION
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 (888007) MSFC 579(1A37) (034)(119)(512)



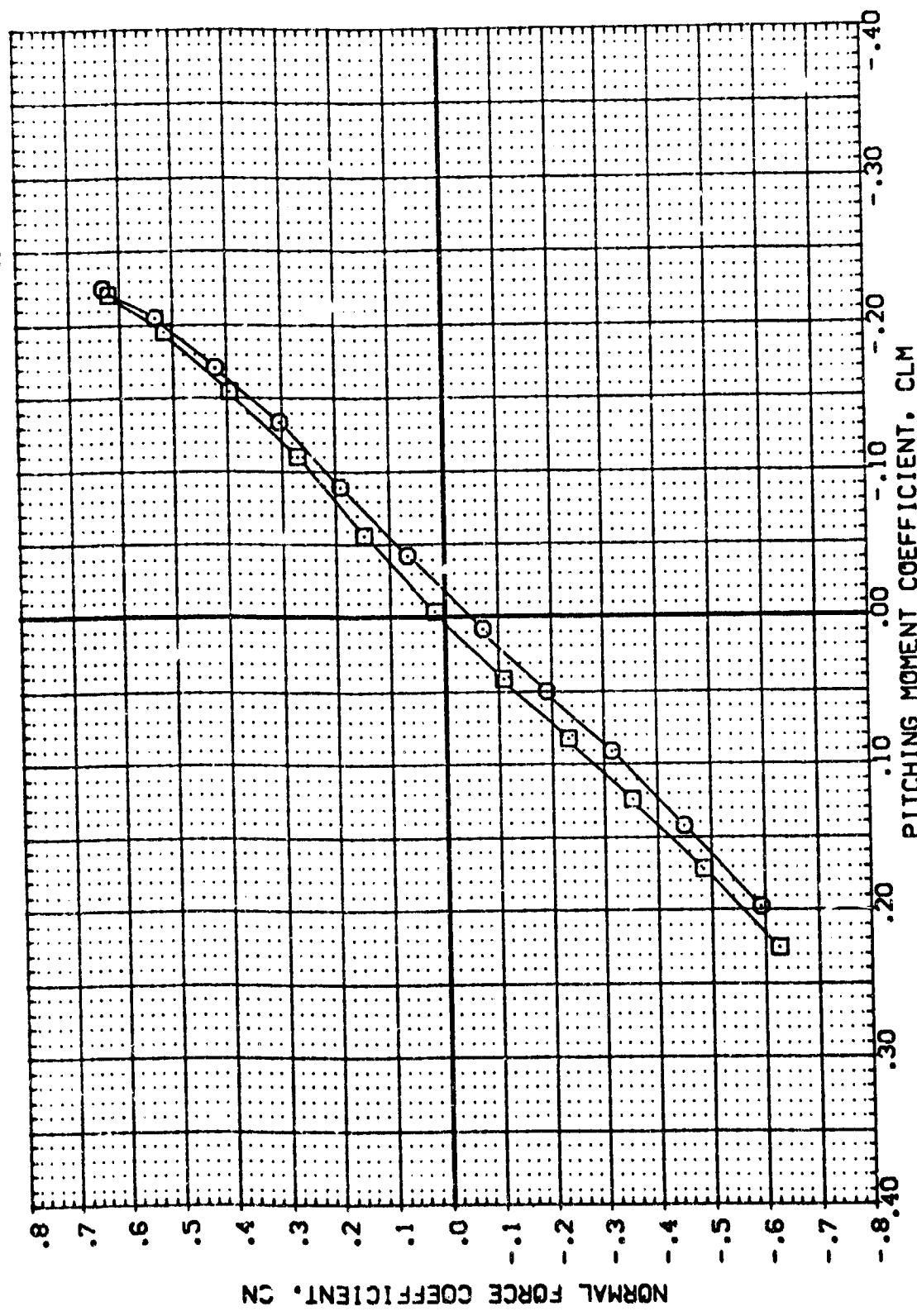
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(GM)MACH = 1.46

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BETA .000 .000 ORBING .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
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 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
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 SCALE .0040



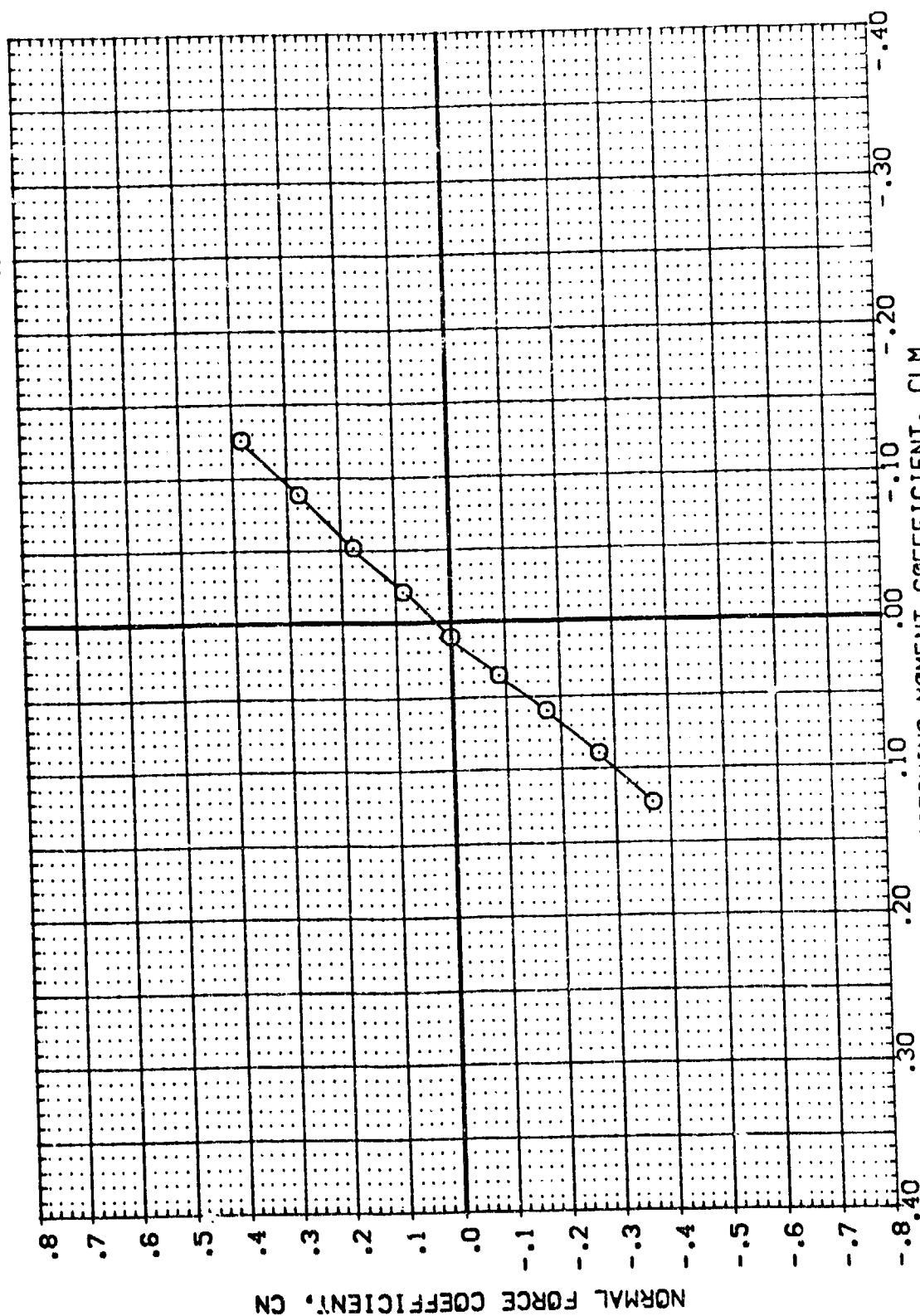
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(H)MACH = 1.96

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 LREF 5.1500 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888009) MSFC 579(1A37) (034)(T14)(S12)(U6)
 (888007) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

REFERENCE INFORMATION

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REF	5.1600	IN.
REF	5.1600	IN.
REF	2.7200	IN.
XMRP	.0000	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

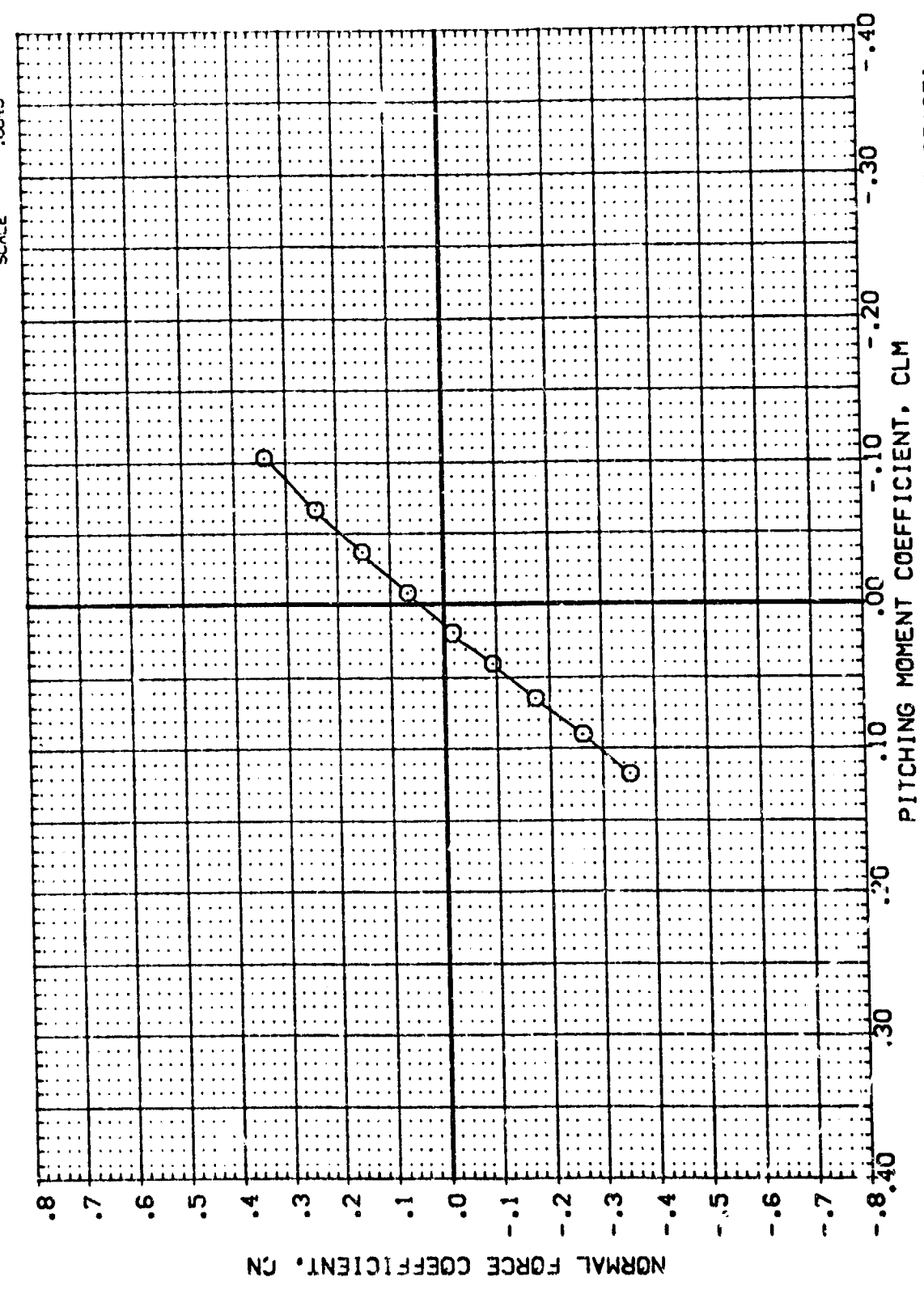
BETA CR81NC

BETA	.000
CR81NC	.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION

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(B86007) DATA NOT AVAILABLE

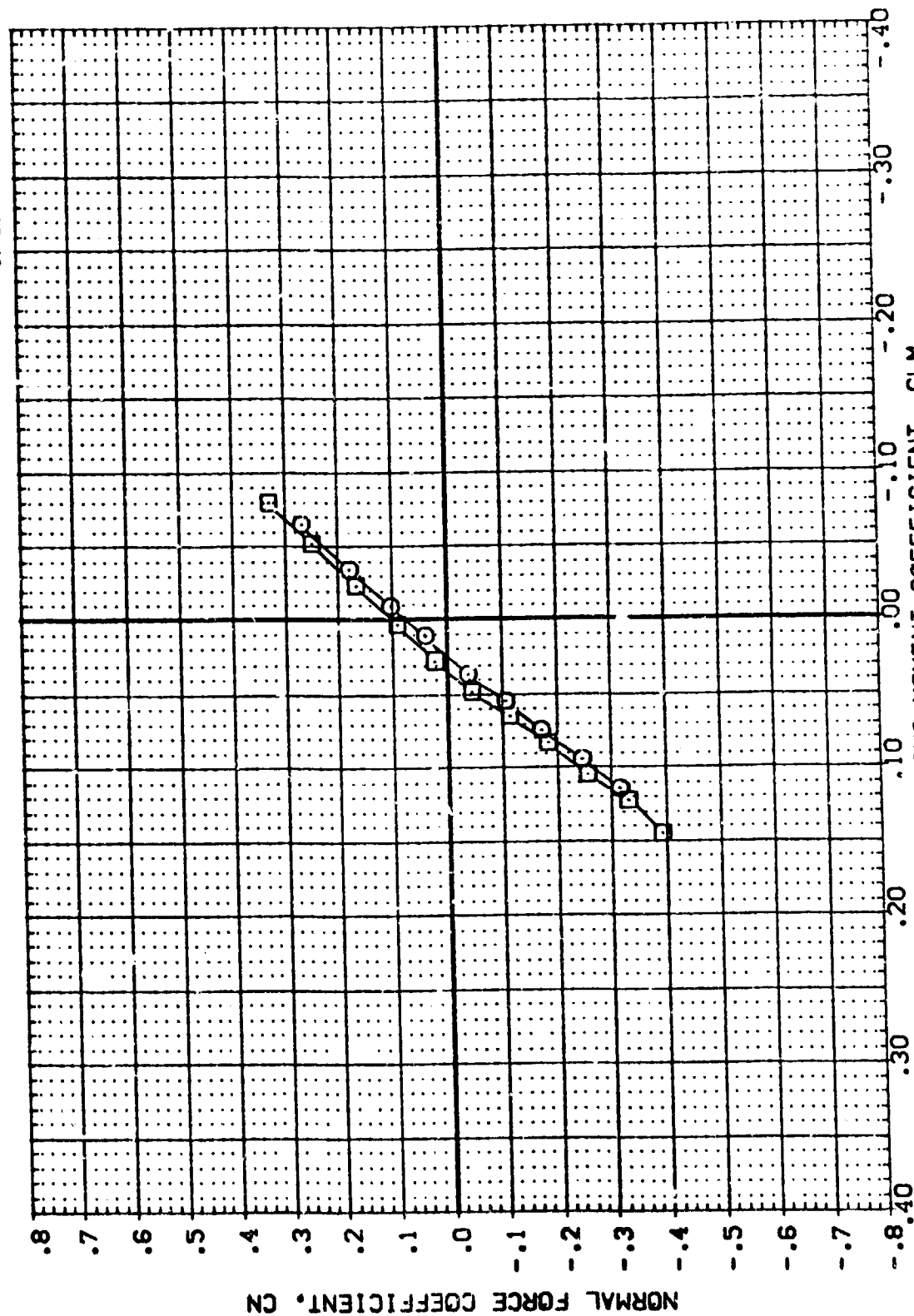


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

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 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0010

BETA 0.000
 ORBINC .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (886009) MSFC 579(1A37) (034)(114)(S)(16)
 (886007) MSFC 579(1A37) (034)(114)(S)(16)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

DATA SET SYMBOL: (888005) (888007)

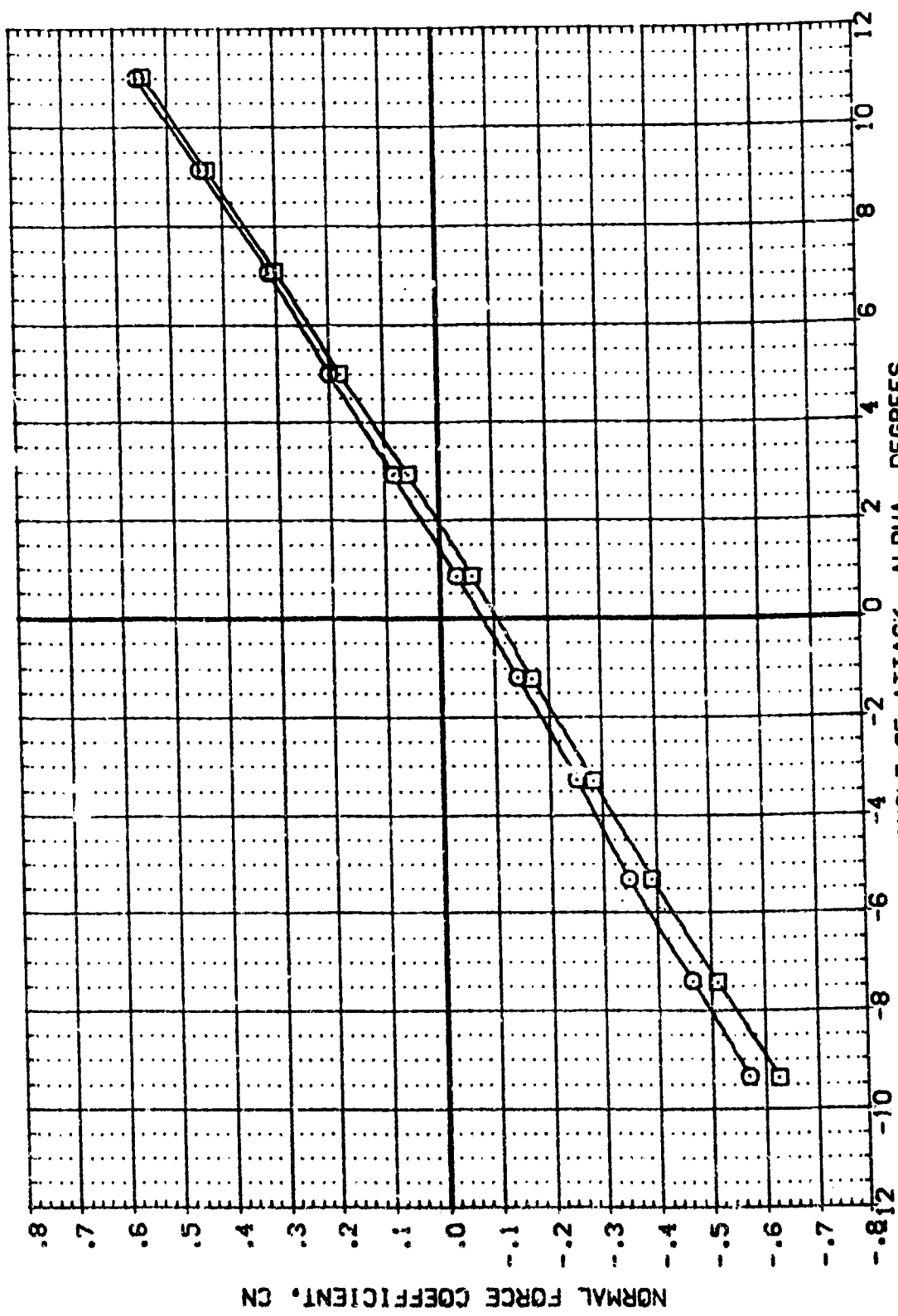
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BETA: .000 .000

ORBIT: .000 .000

REFERENCE INFORMATION:

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DREF	5.1600	IN.
XMRP	2.7200	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0010	



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

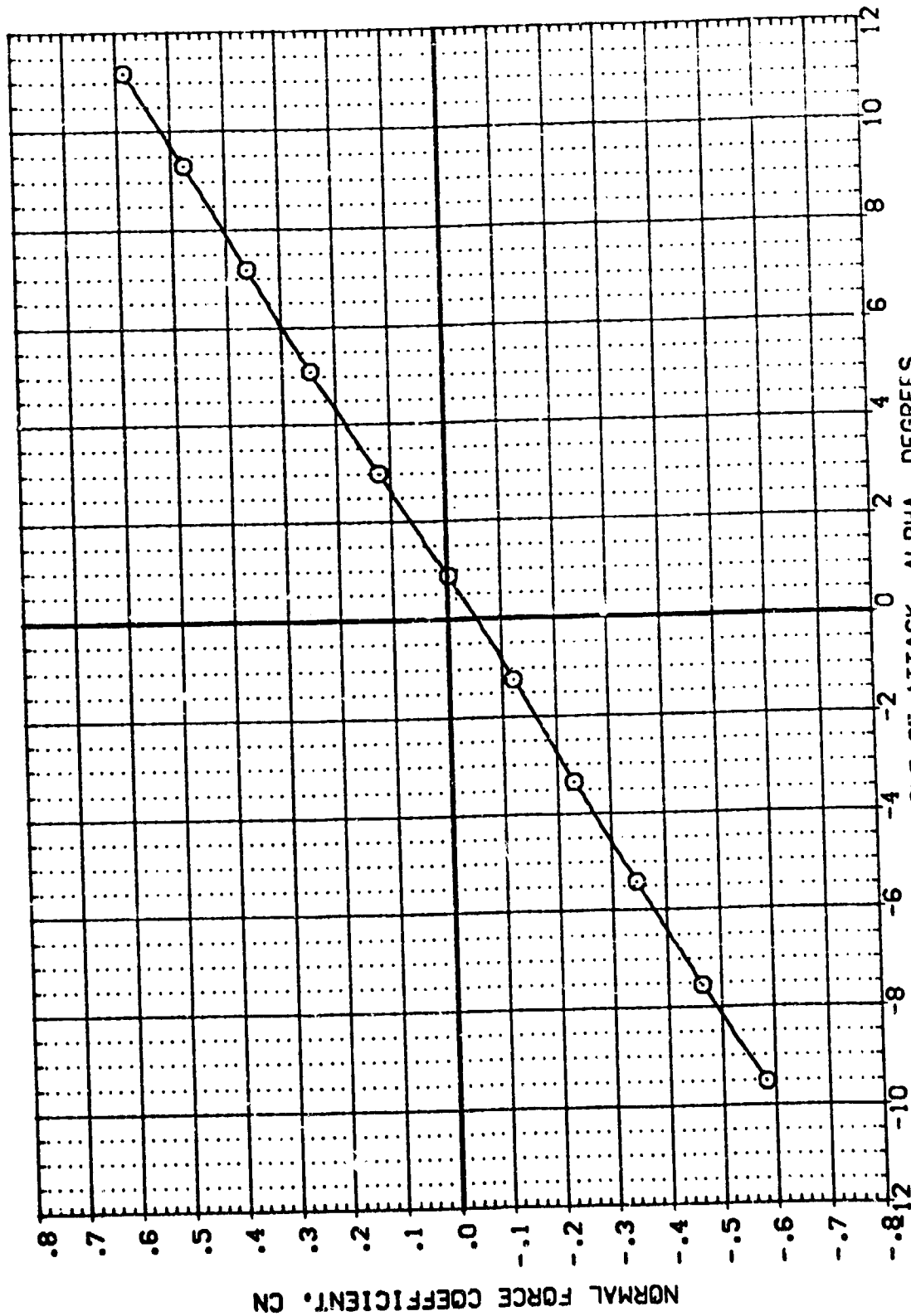
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BETA: .000
 ORBING: .000

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 SCALE: .0010



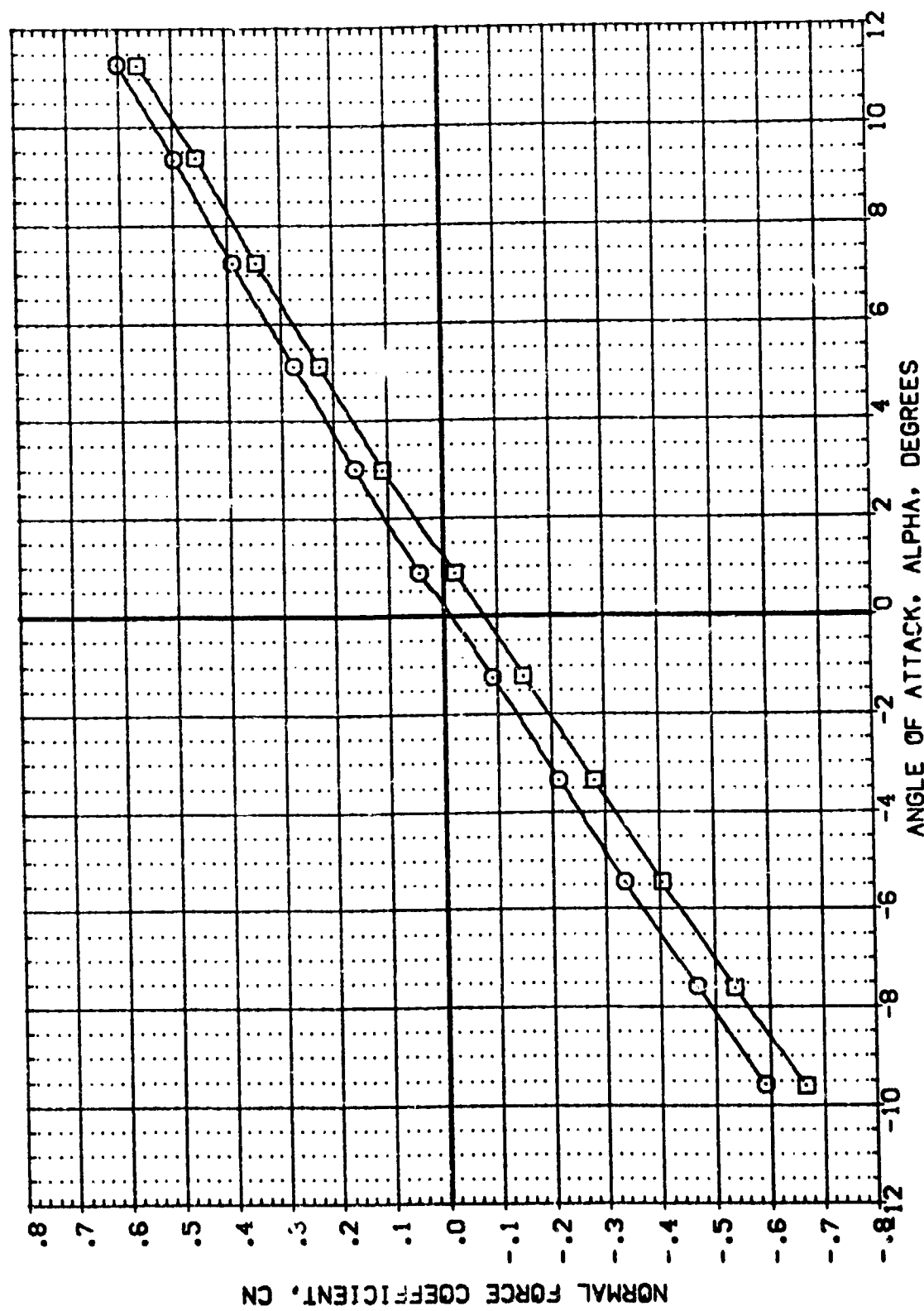
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(B)MACH = .80

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 ORBINC: .000

REFERENCE INFORMATION:
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 XREF: 2.7200 IN.
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 ZREF: .0000 IN.
 SCALE: .0010



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

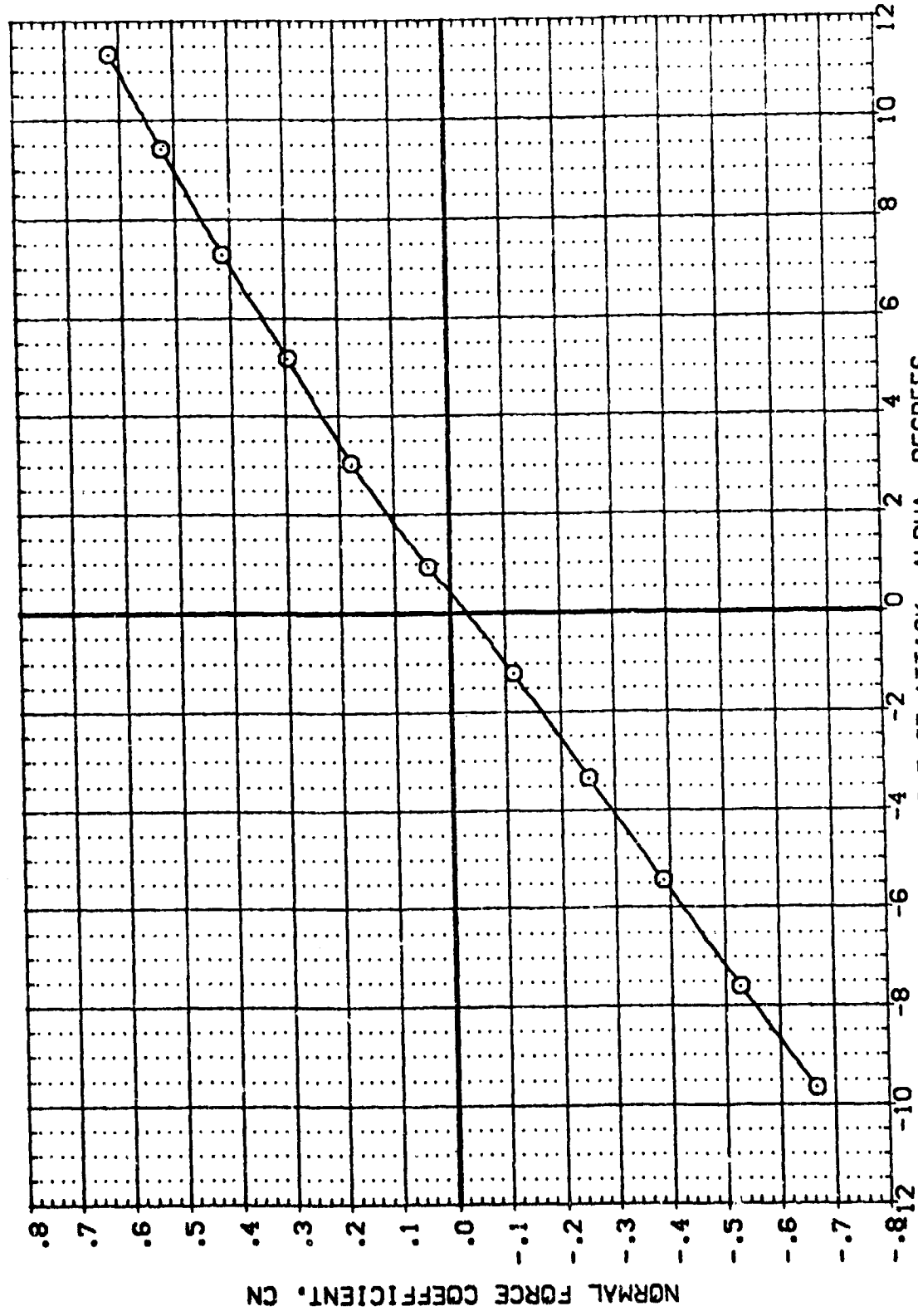
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ORBITING: .000

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BREF: 5.1600 IN.
XMRP: 2.7200 IN.
YMRP: .0000 IN.
ZMRP: .0000 IN.
SCALE: .0010



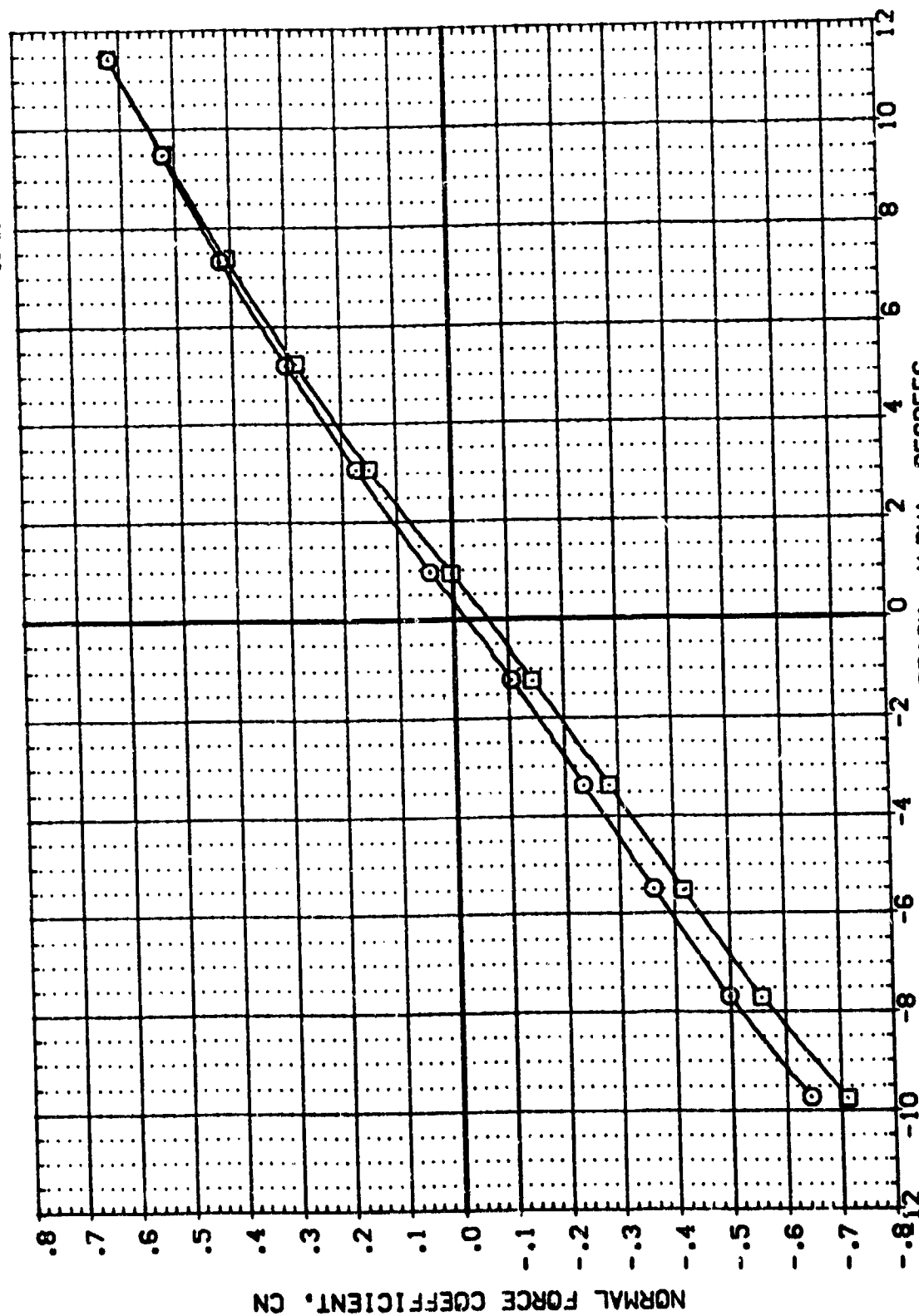
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(O)MACH = 1.00

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 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBING
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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 (888007) MSFC 578(1A37) (034)(119)(512)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

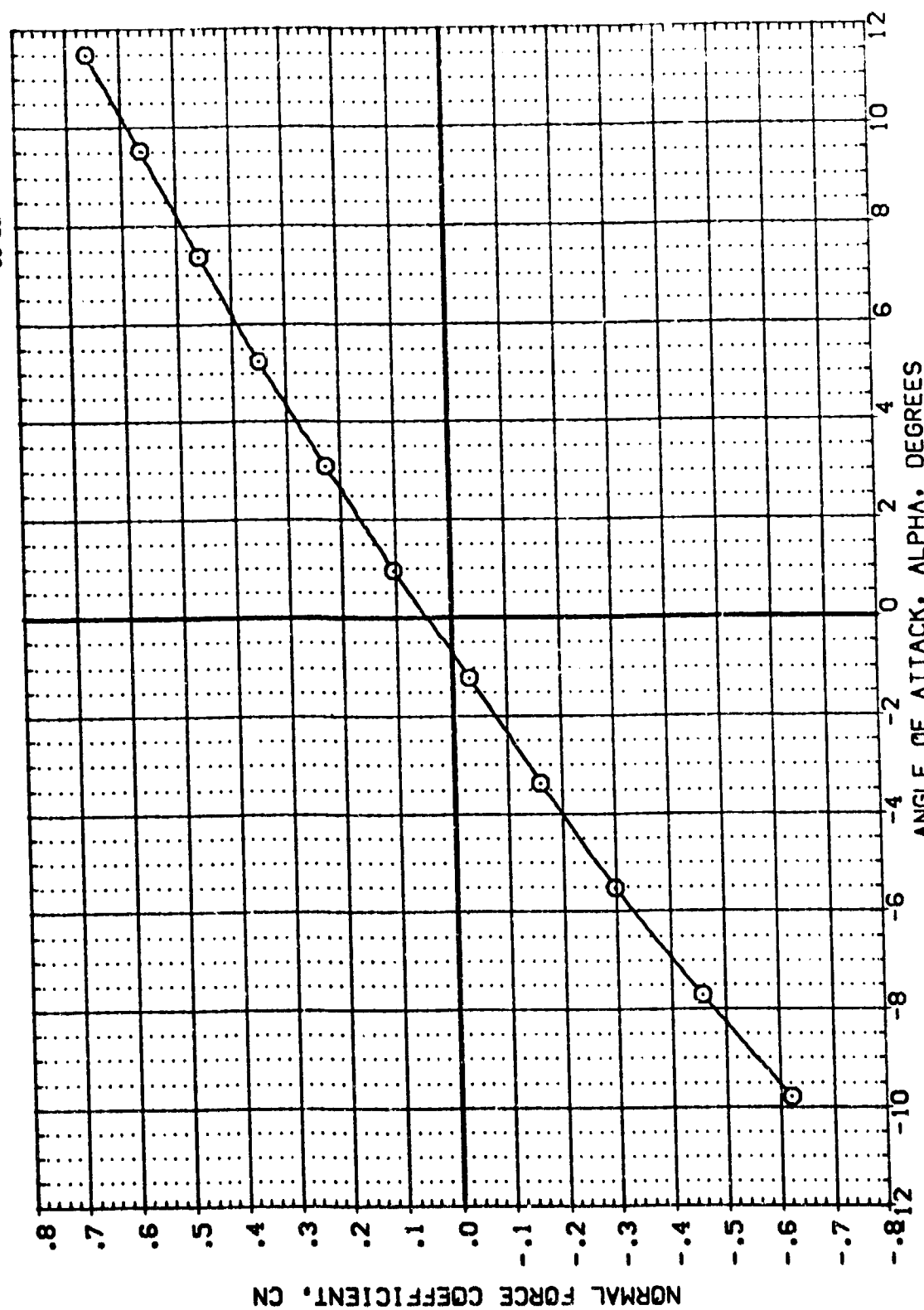
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BETA ORB INC
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:000 :000

REFERENCE INFORMATION
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BREF 5.1600 IN.
YPRP 2.7200 IN.
ZPRP :0000 IN.
ZPRP :0000 IN.
SCALE :0040



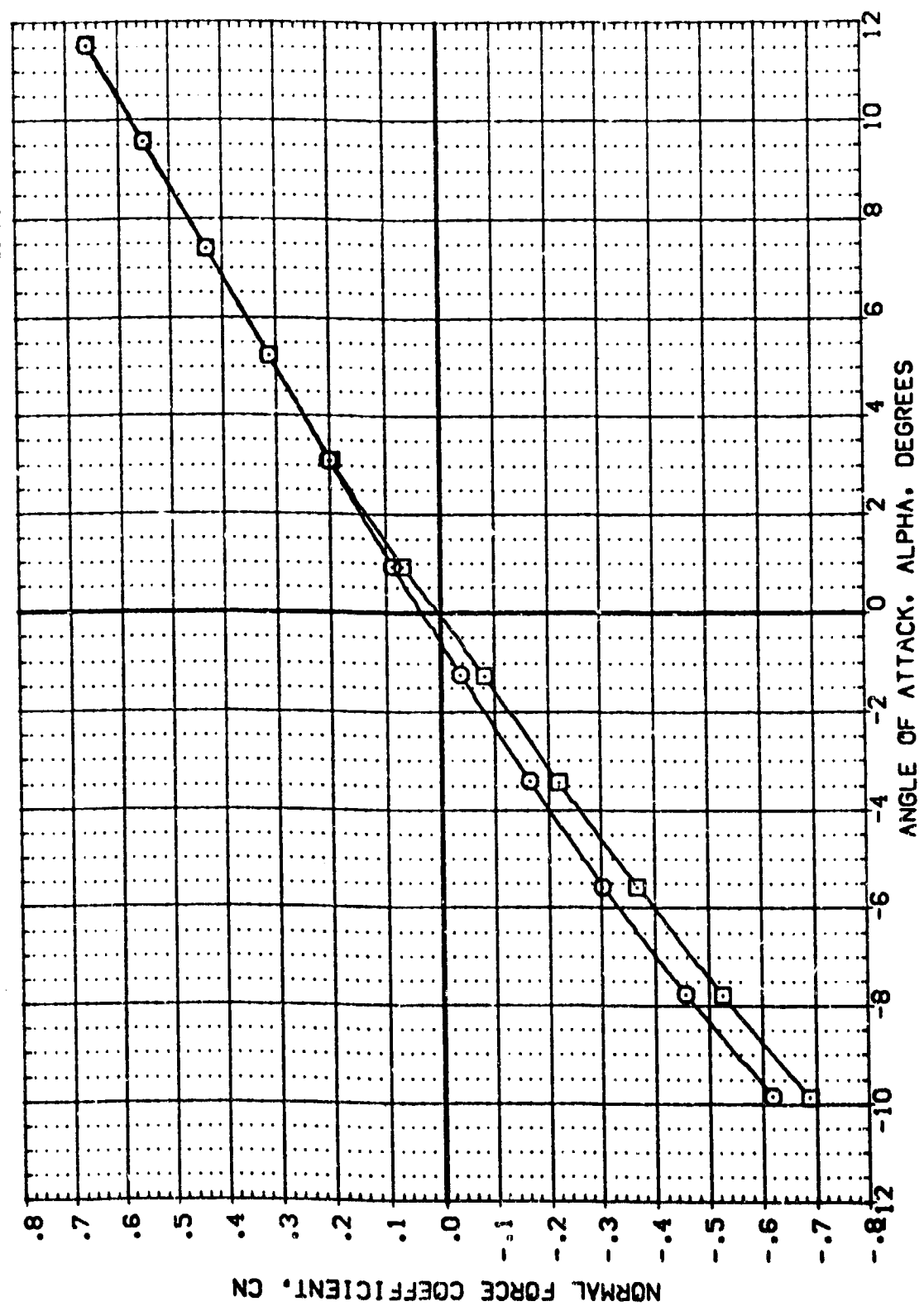
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(F)MACH = 1.20

REFERENCE INFORMATION
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 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (880009) MSFC 579(1A37) (034)(114)(S12)(U6)
 (880007) MSFC 579(1A37) (034)(19)(S12)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

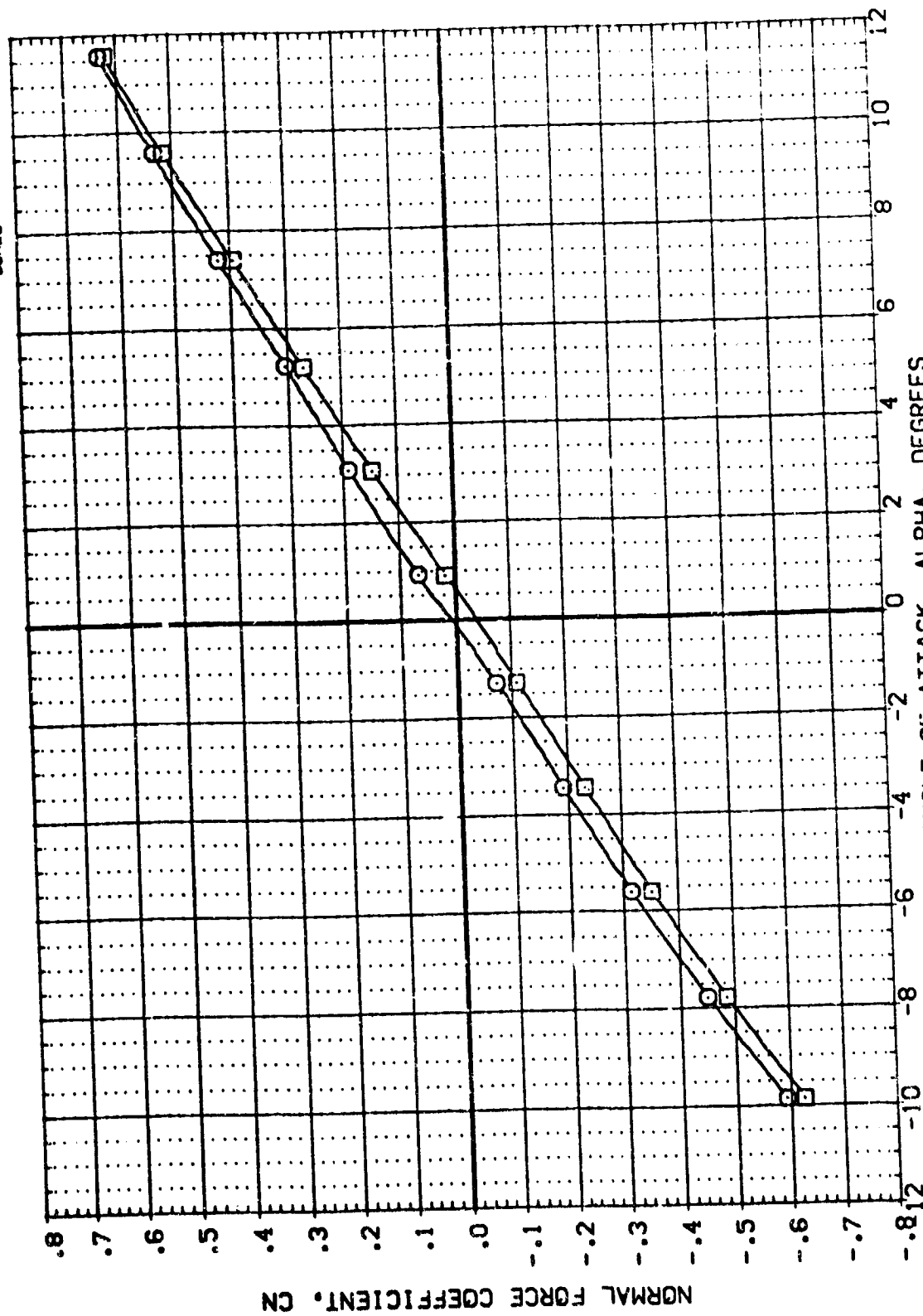
(G)MACH = 1.46



REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (1980009) MSFC 579(1A37) (034)(T14)(S12)(U6)
 (888007) MSFC 579(1A37) (034)(T9)(S12)

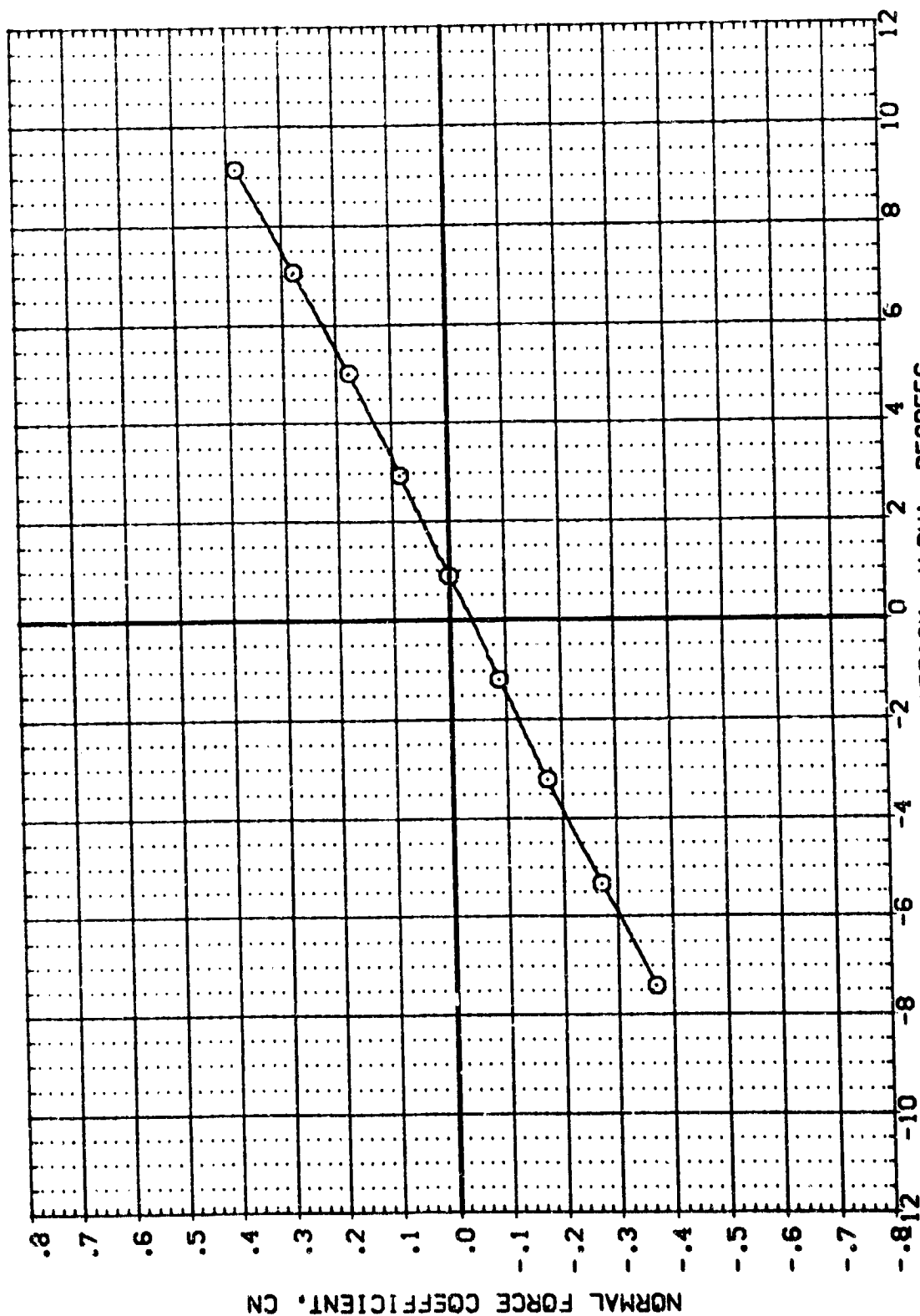


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

REFERENCE INFORMATION
 SREF 6.1980 50.1N.
 LREF 5.1600
 BREF 5.1600
 XMRP 2.7200
 YMRP .0000
 ZMRP .0000
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888009) MSFC 579(1A37) (034)(114)(S12)(U6)
 (888007) DATA NOT AVAILABLE



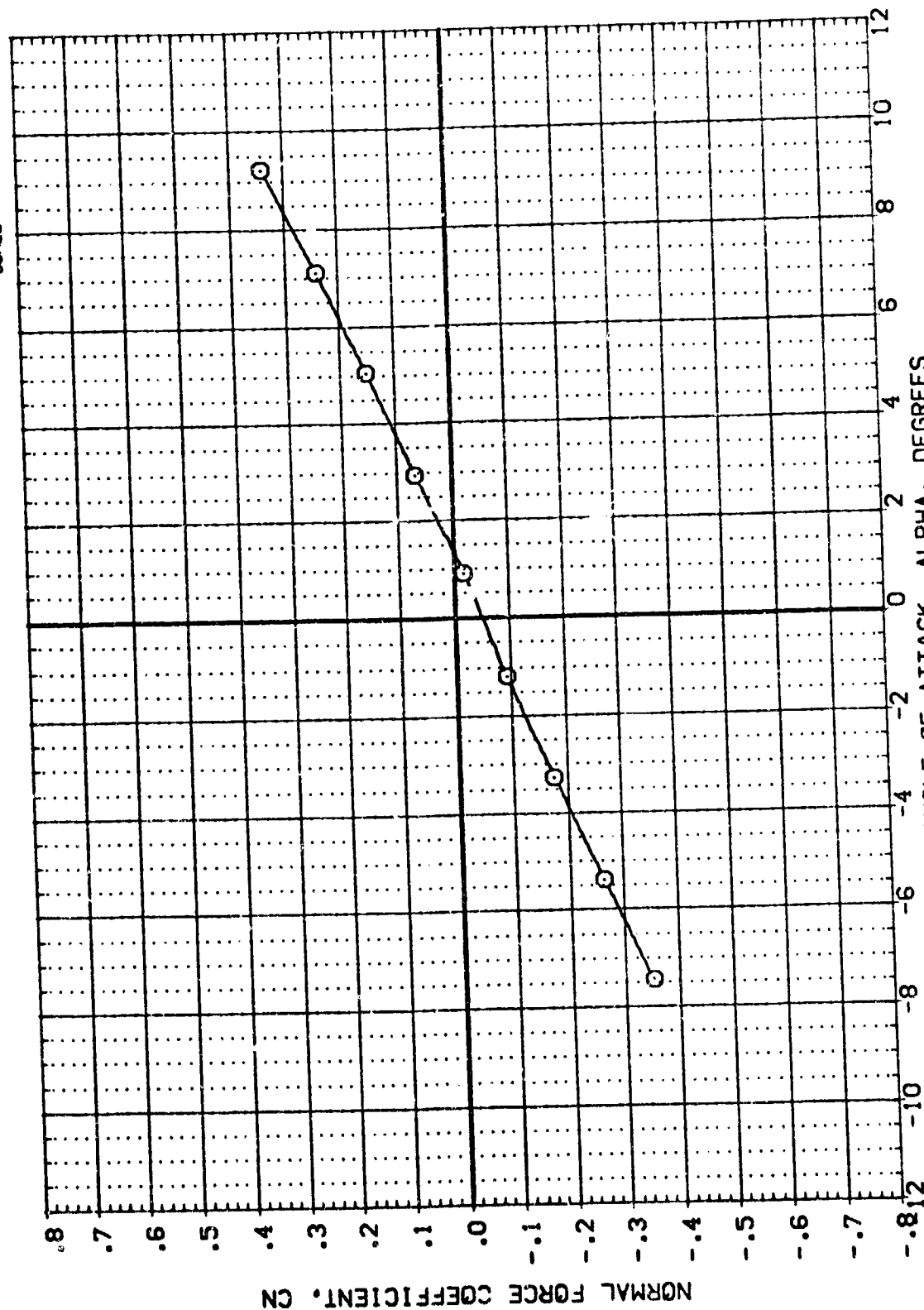
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(1)MACH = 2.99

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888009) MSFC 579(1A37) (034)(T14)(S12)(US)
 (888007) DATA NOT AVAILABLE

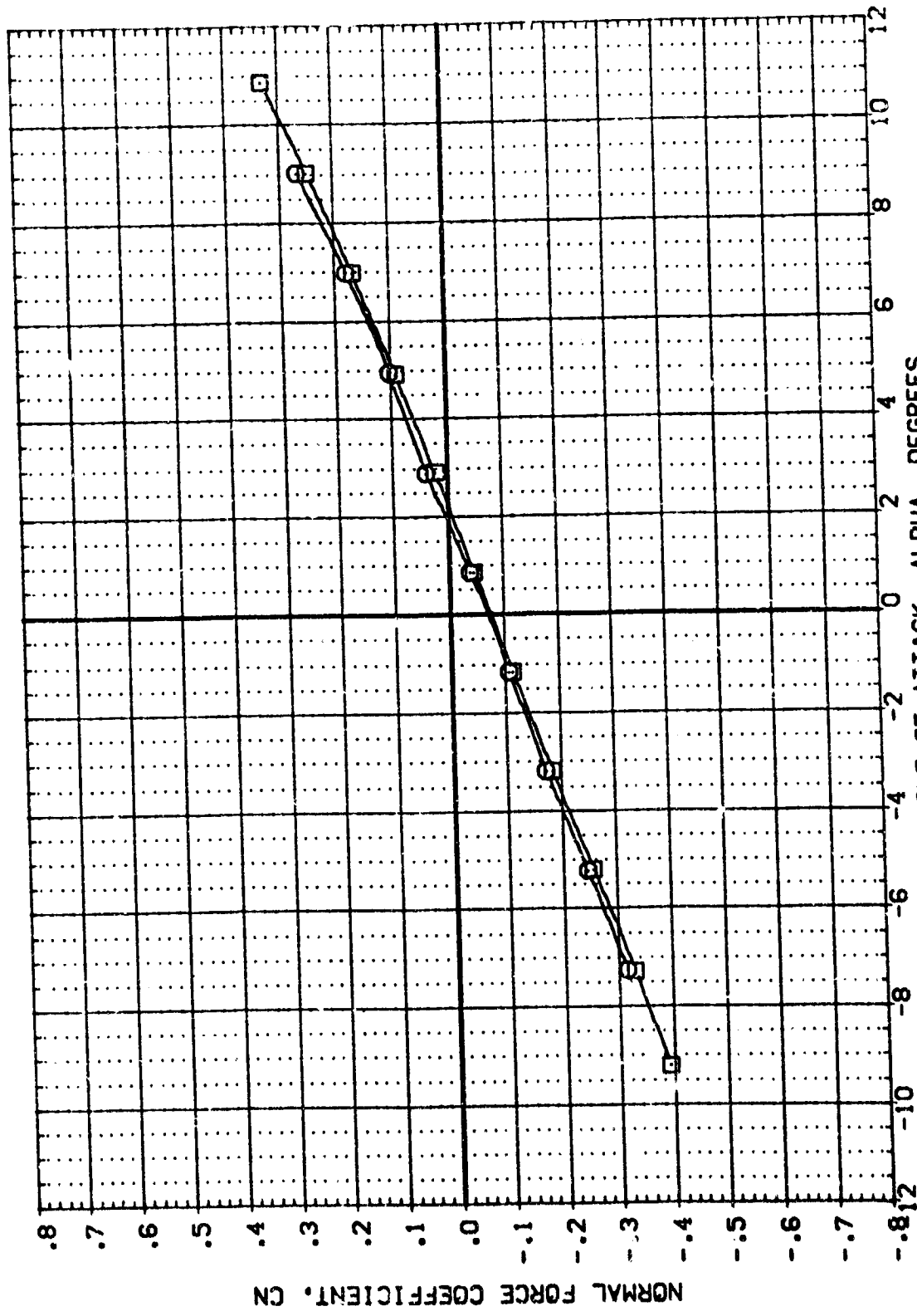


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888009) MSFC 579(1A37) (034)(114)(S12)(U6)
 (888007) MSFC 579(1A37) (034)(119)(S12)


BETA ORBING
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



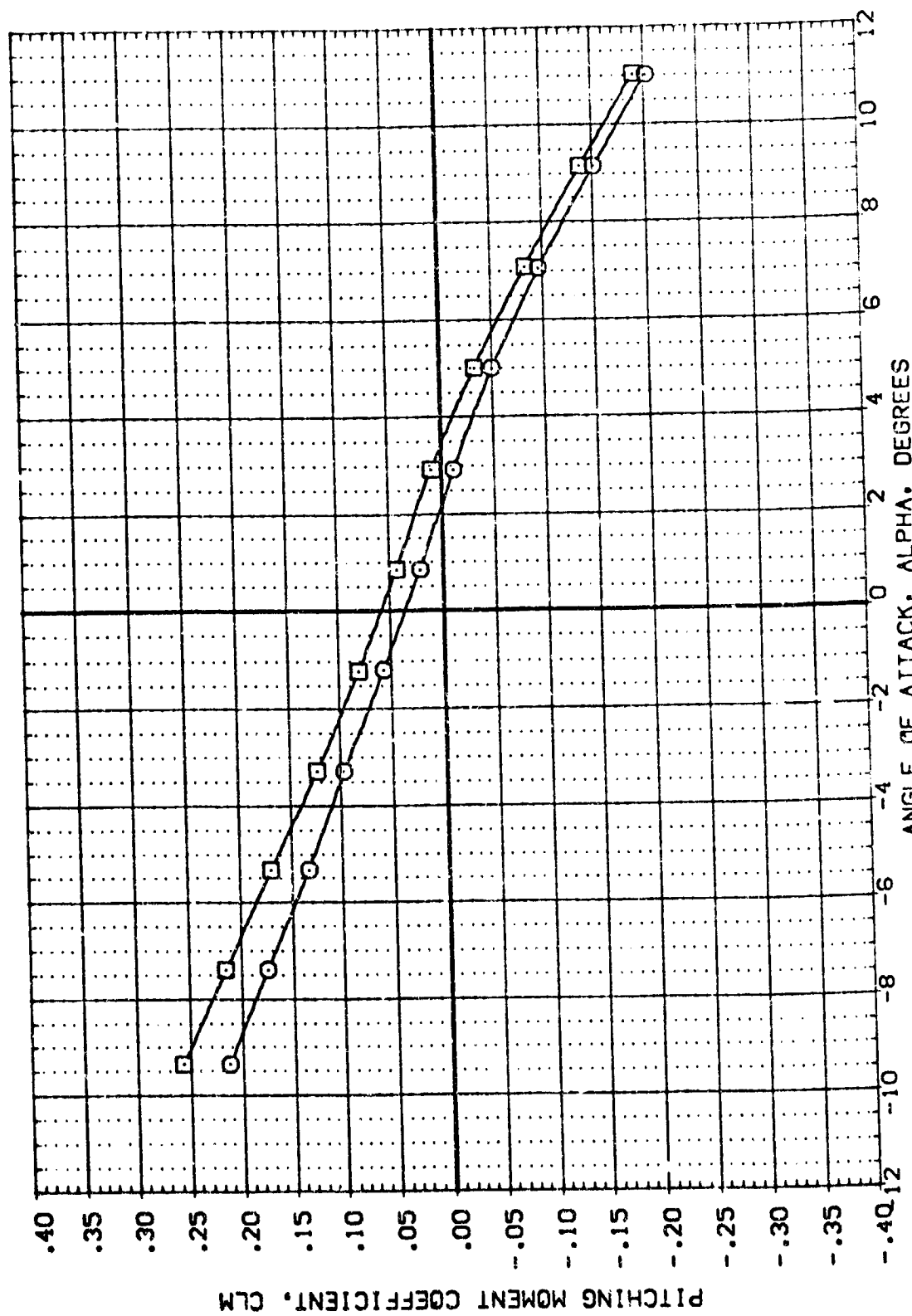
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
 (K)MACH = 4.96
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DATA SET SYMBOL: (B86009) (B86007)  CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(T14)(S12)(U6) MSFC 579(1A37) (034)(T19)(S12)

BETA: .000 .000 ORBINC: .000 .000

REFERENCE INFORMATION:
SREF: 6.1980 SQ. IN.
LREF: 5.1600 IN.
BREF: 5.1600 IN.
XMRP: 2.7200 IN.
YMRP: .0000 IN.
ZMRP: .0000 IN.
SCALE: .0040

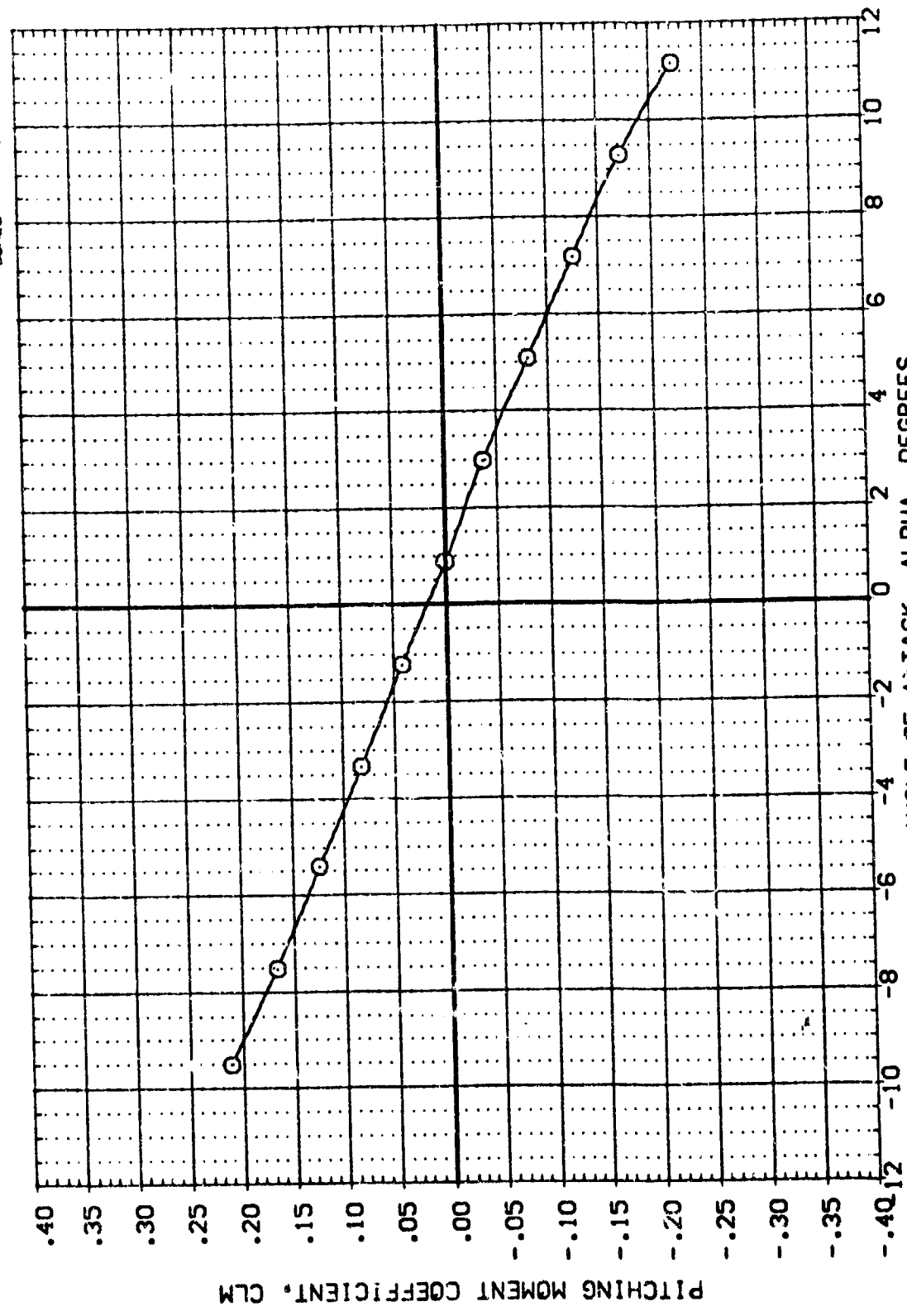


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1800 IN.
 BREF 5.1800 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88009) MSFC 579(1A37) (034)(114)(512)(J6)
 (B88007) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(B)MACH = .80



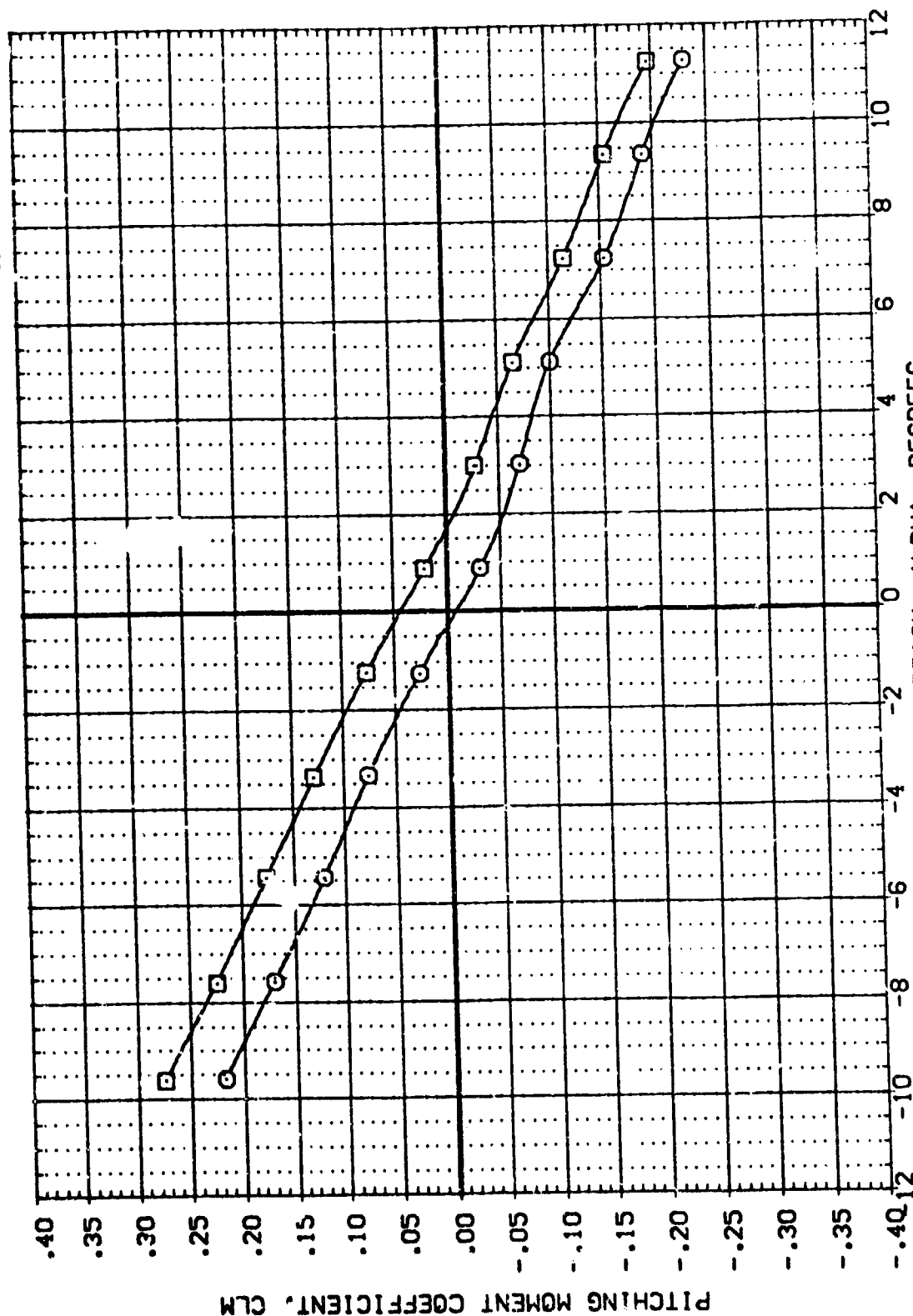
DATA SET SYMBOL
(889009)
(889007)

CONFIGURATION DESCRIPTION
MSFC 579(1A37) (034)(114)(S12)(U6)
MSFC 579(1A37) (034)(119)(S12)

BETA
.000
.000

ORBITING
.000
.000

REFERENCE INFORMATION
DREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
YARP 2.7200 IN.
YARP .0000 IN.
ZARP .0000 IN.
SCALE .0340



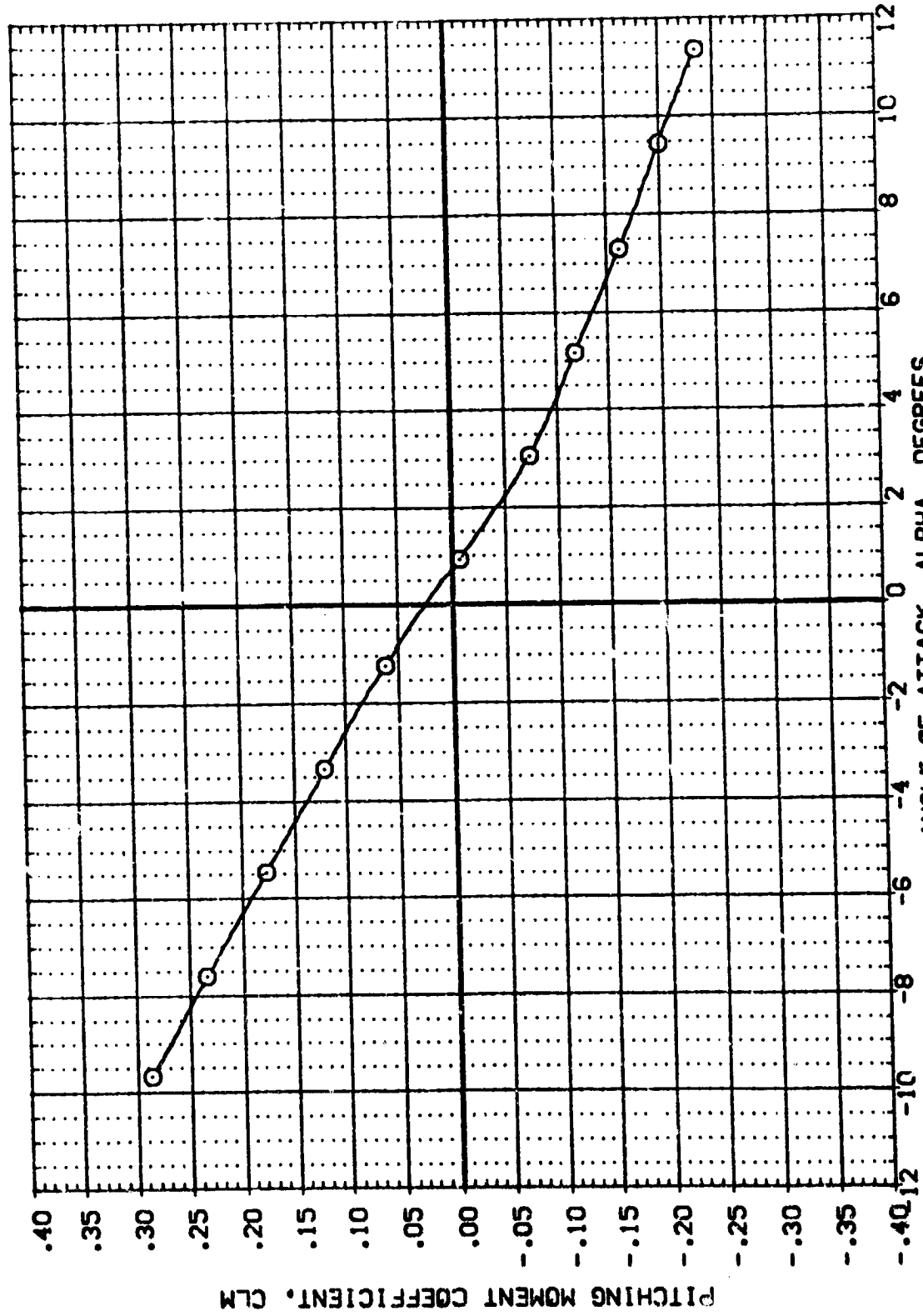
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(C)MACH = .90

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 3.1600 IN.
 SREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

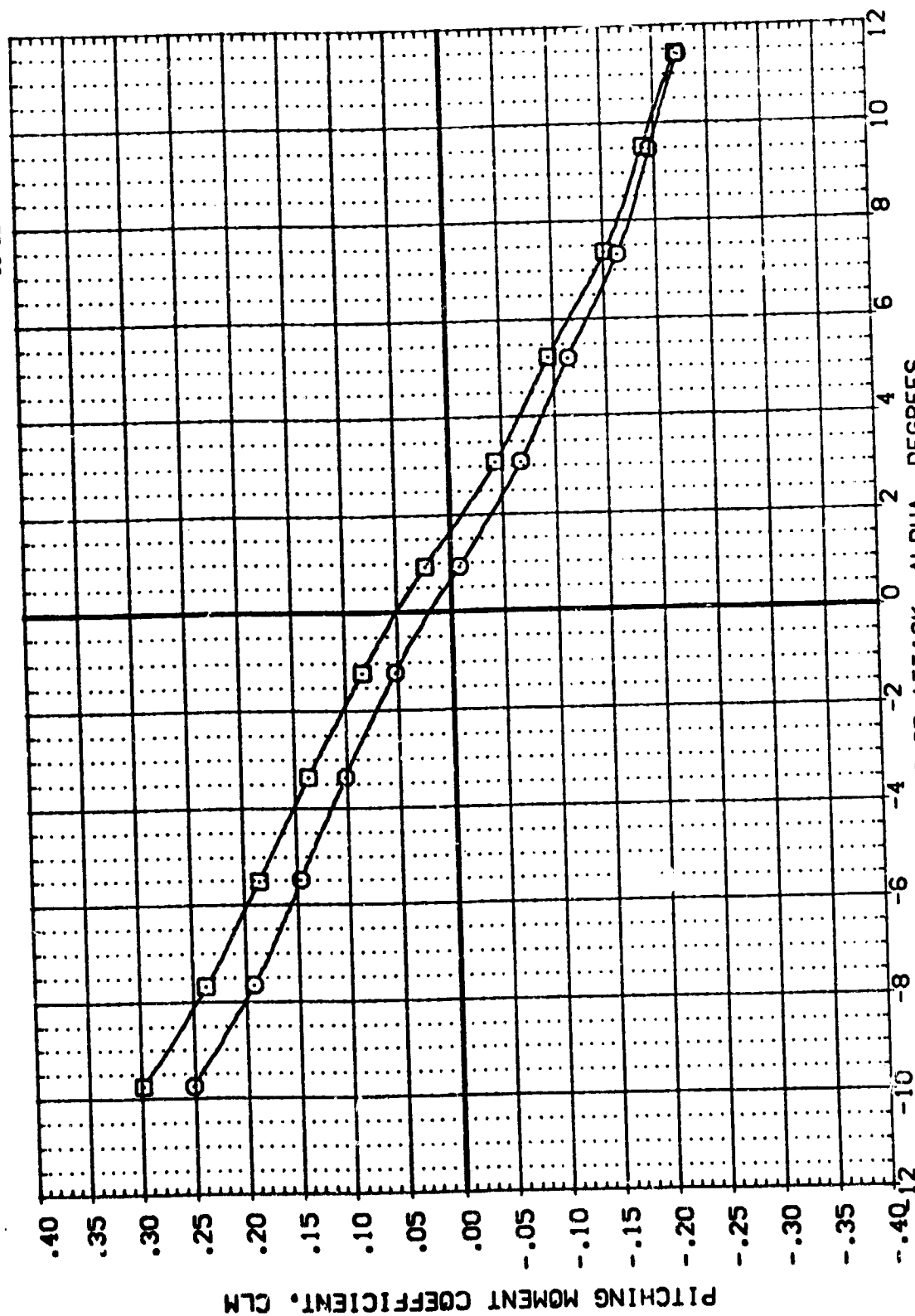
BETA ORBING
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888009) MSFC 579(1A37) (034)(114)(S12)(U6)
 (888007) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(D)MACH = 1.00



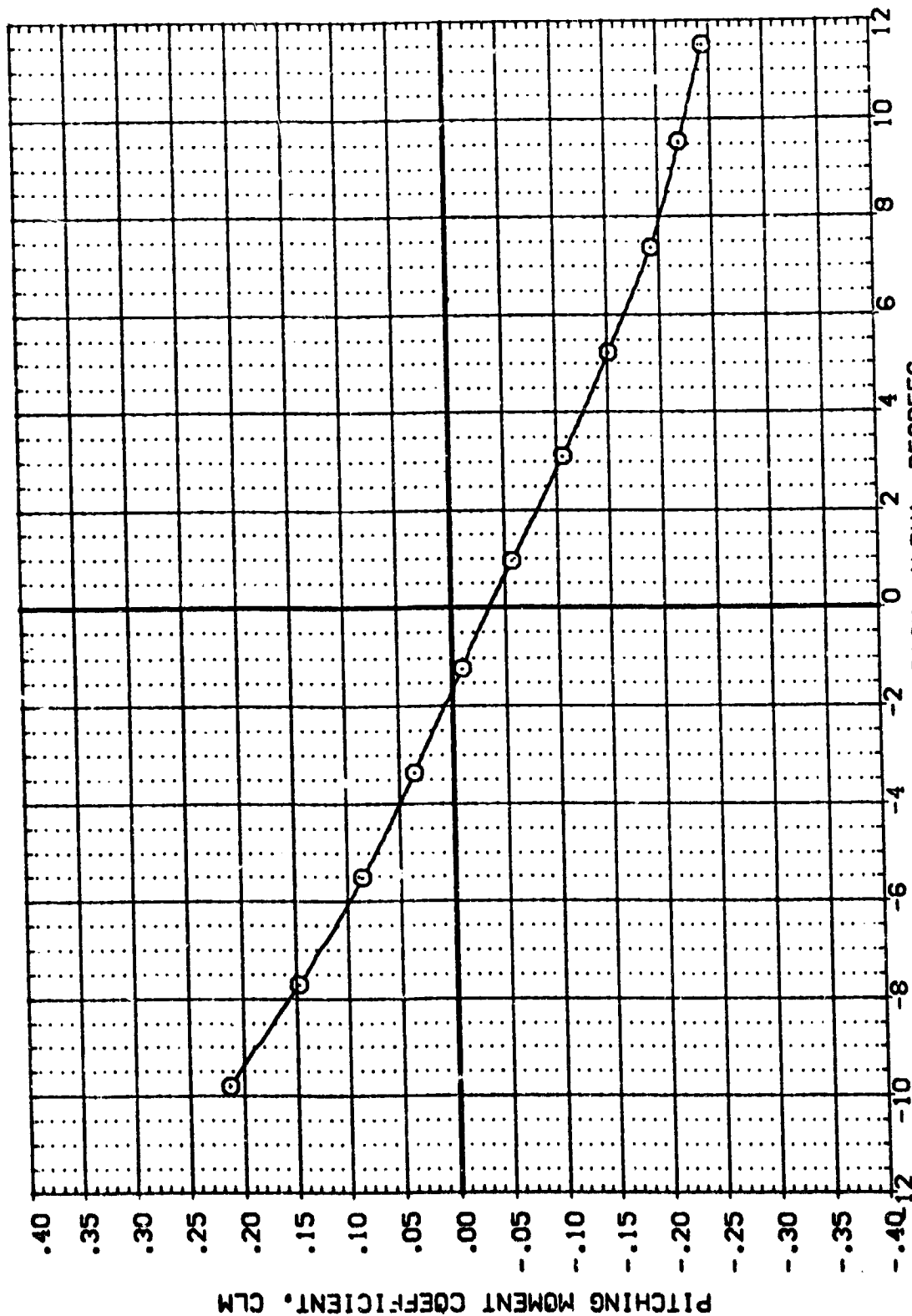
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

CEJMACH = 1.10

DATA SET SYMBOL: (B88009)
 CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(T14)(S12)(US)
 DATA NOT AVAILABLE

BETA: .000
 ORBING: .000

REFERENCE INFORMATION:
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

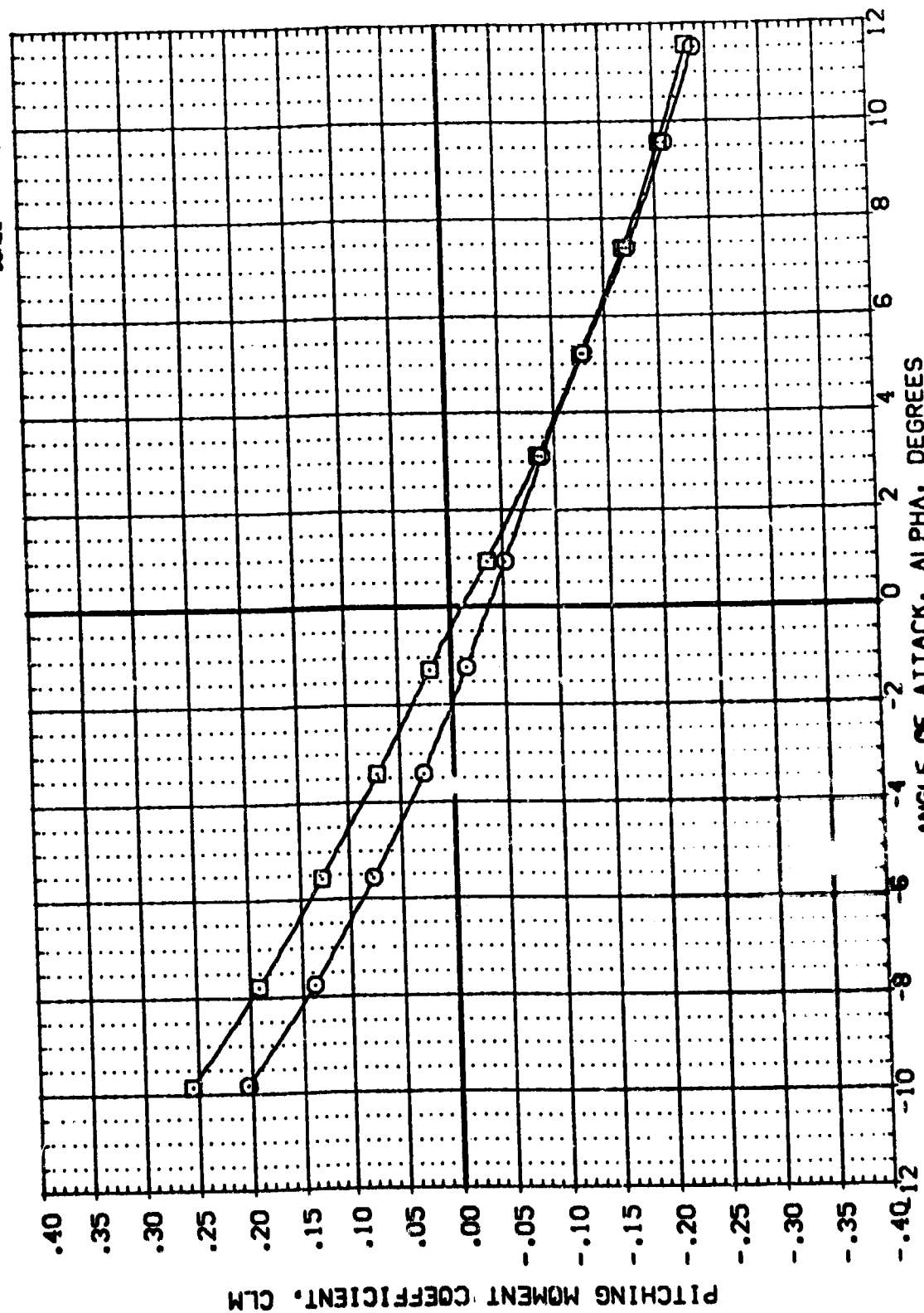
(F)MACH = 1.20



DATA SET SYMBOL: (888007) ☐ CONFIGURATION DESCRIPTION: MSFC 579(A37) (034)(T14)(S12)(U6) MSFC 579(A37) (034)(T19)(S12)

BETA: .000 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 6.1980 50. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



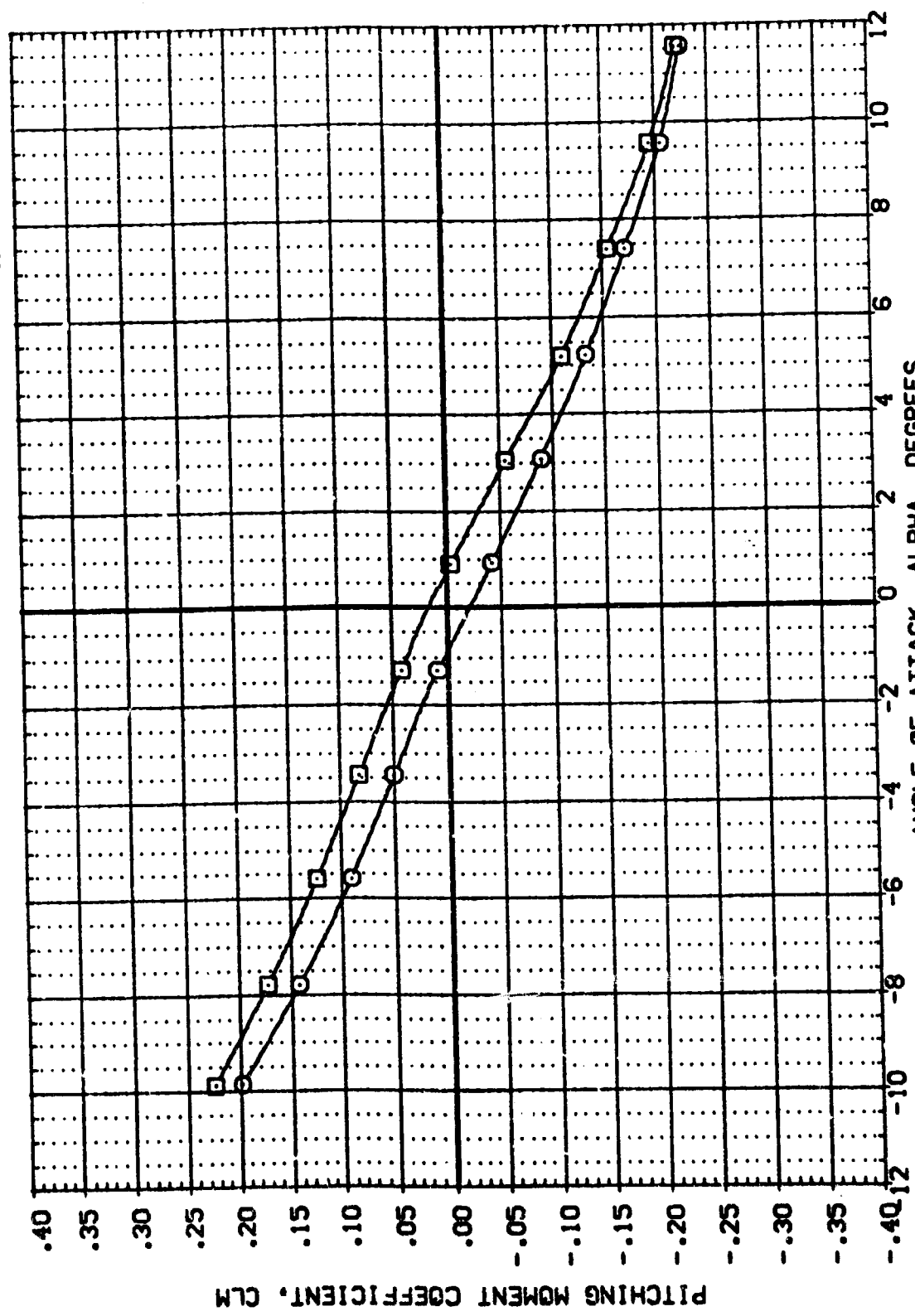
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(G)MACH = 1.46

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (1-20000) (1-20000) (1-20000) (1-20000)
 (1-20000) (1-20000) (1-20000) (1-20000)

BETA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 5.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

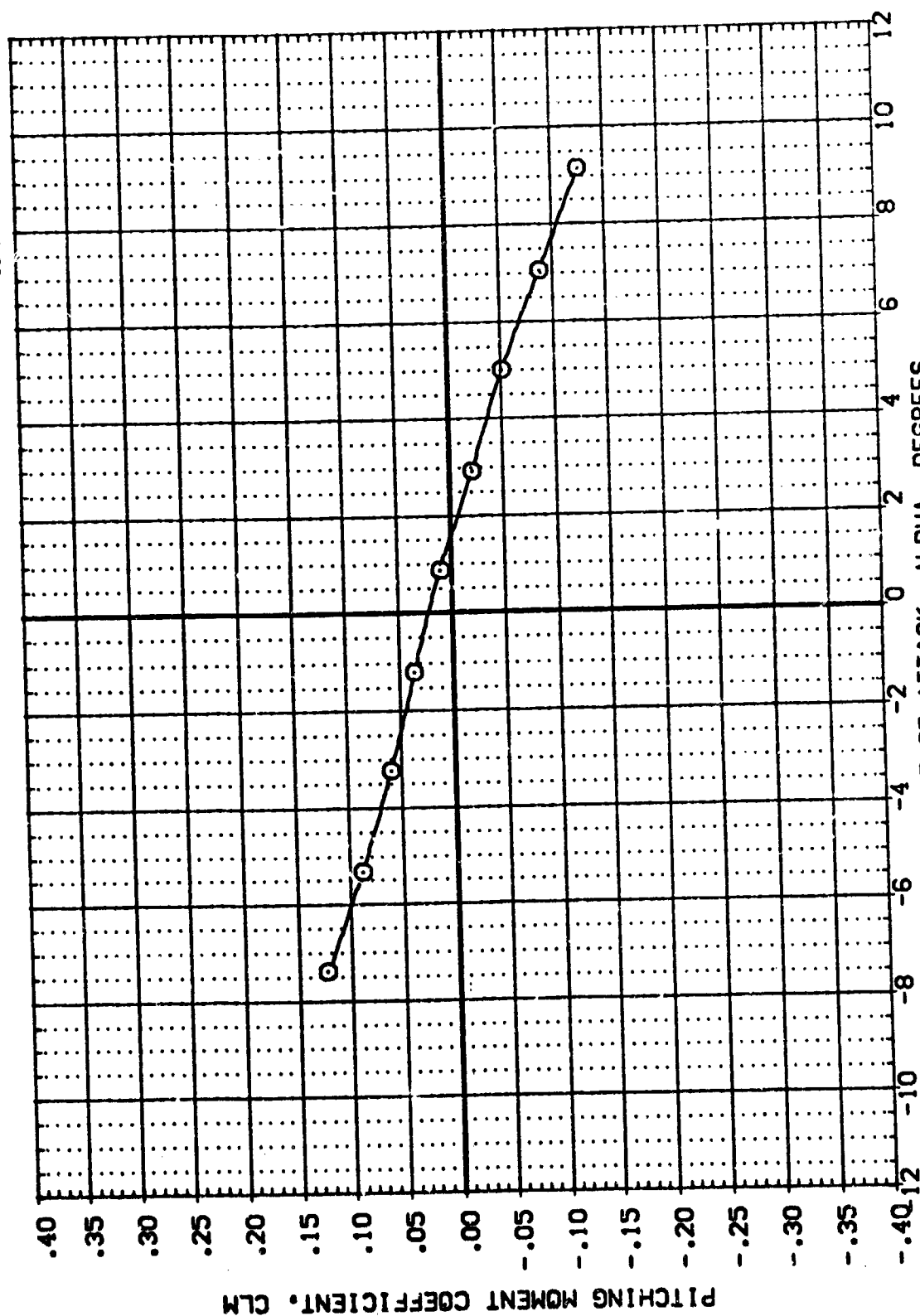
(H)MACH = 1.96



DATA SET SYMBOL: (888009) (888007)  CONFIGURATION DESCRIPTION: MSFC 5791(A37) (034J)(714J)(S12)(US) DATA NOT AVAILABLE

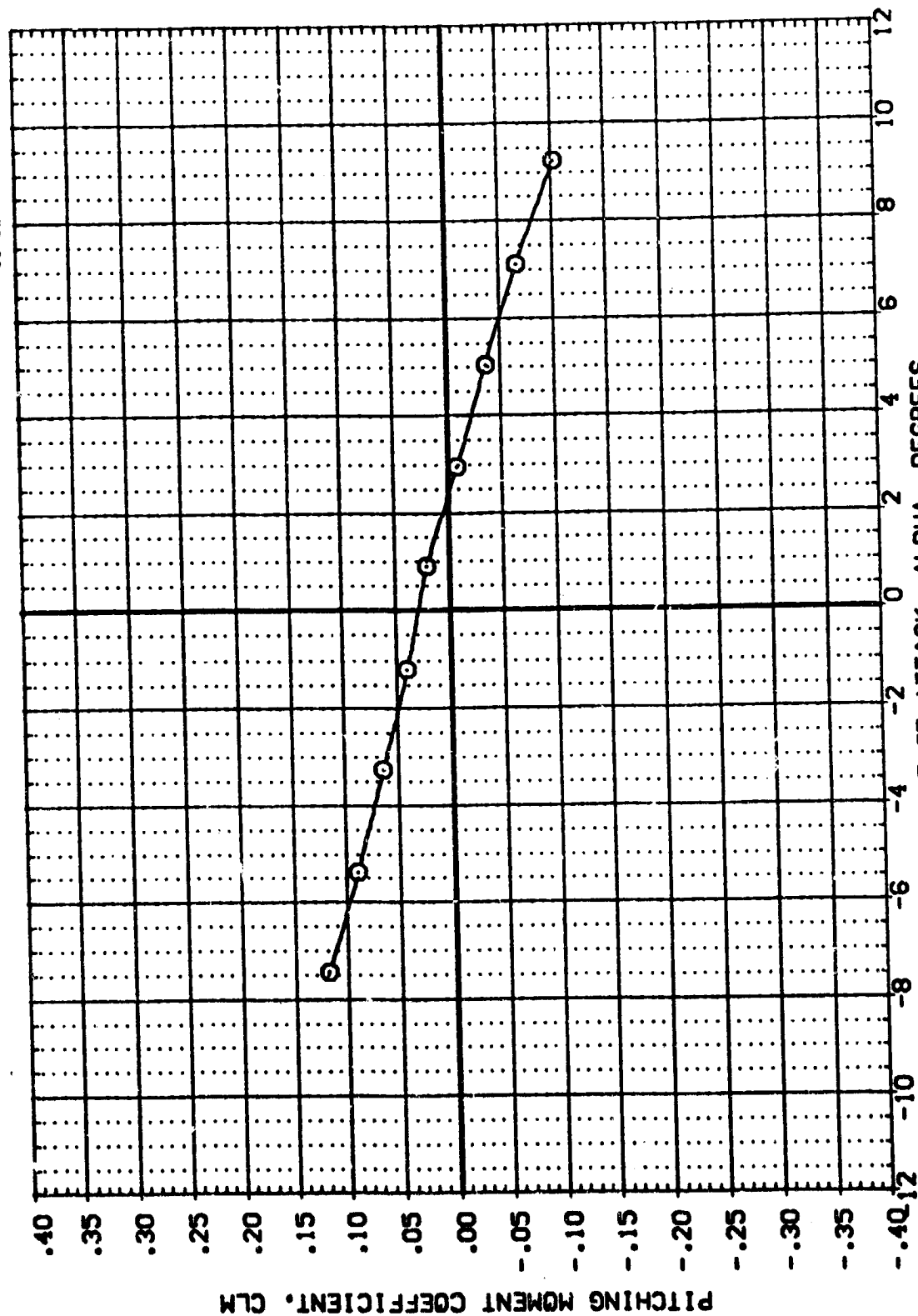
BETA: .000 .000 ORIGIN: .000 .000

REFERENCE INFORMATION:
SREF: 6.1980 SQ. IN.
LREF: 5.1500 IN.
BREF: 5.1500 IN.
XMRP: 2.7200 IN.
YMRP: .0000 IN.
ZMRP: .0000 IN.
SCALE: .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

REFERENCE INFORMATION	
SREF	6.1980 SQ. IN.
LREF	5.1600 IN.
BREF	5.1600 IN.
XTRP	2.7200 IN.
YTRP	.0000 IN.
ZTRP	.0000 IN.
SCALE	.0040



ANGLE OF ATTACK, ALPHA, DEGREES

(J)MACH = 3.48

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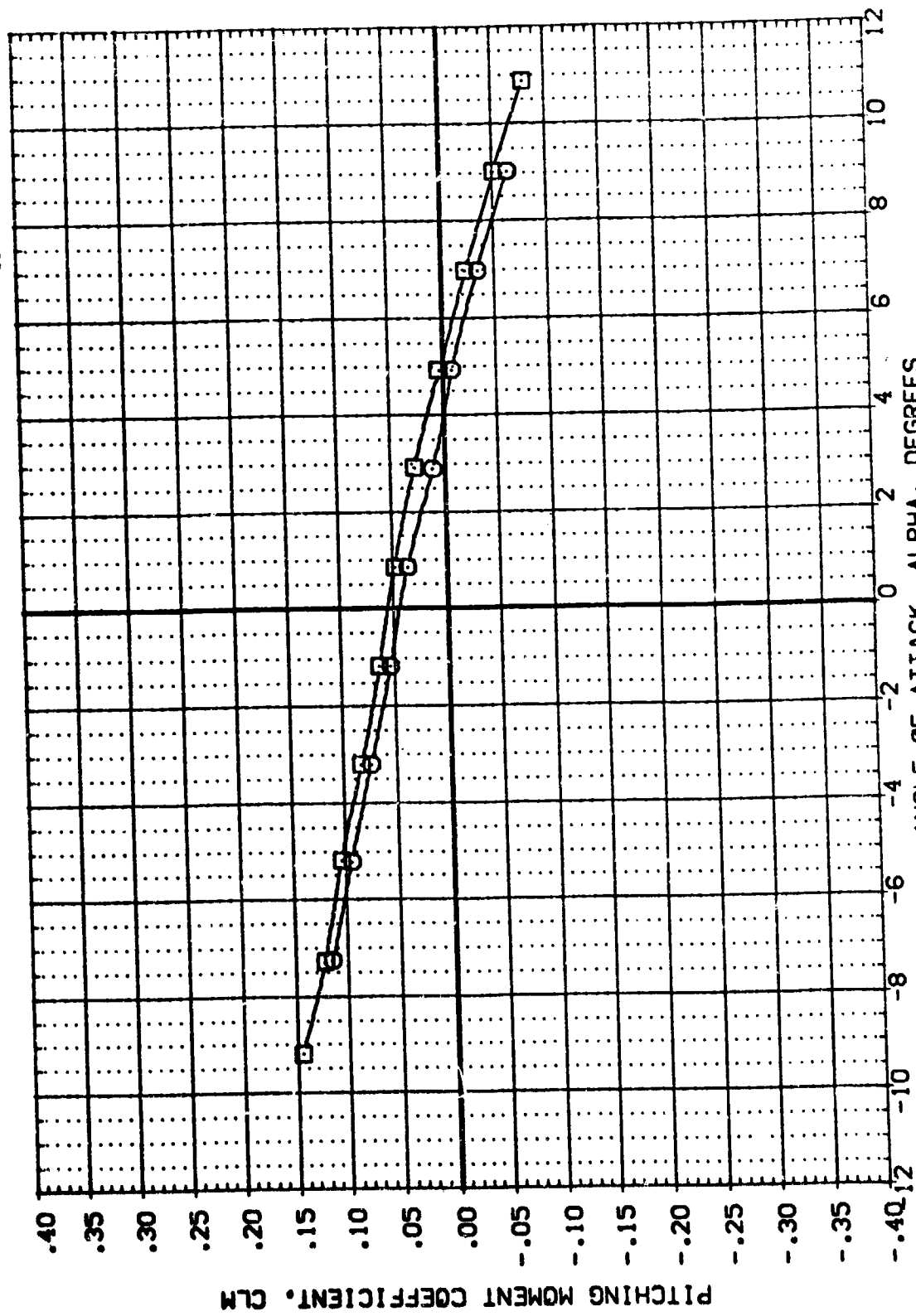
DATA SET SYMBOL: (888009) (888007)

CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(114)(S12)(U6) MSFC 579(1A37) (034)(19)(S12)

BETA: .000 .000

ORBITAL: .000 .000

REFERENCE INFORMATION: SREF 6.1980 SQ. IN. LREF 5.1500 IN. BREF 5.1500 IN. XMRP 2.7200 IN. YMRP .0000 IN. ZMRP .0000 IN. SCALE .0040



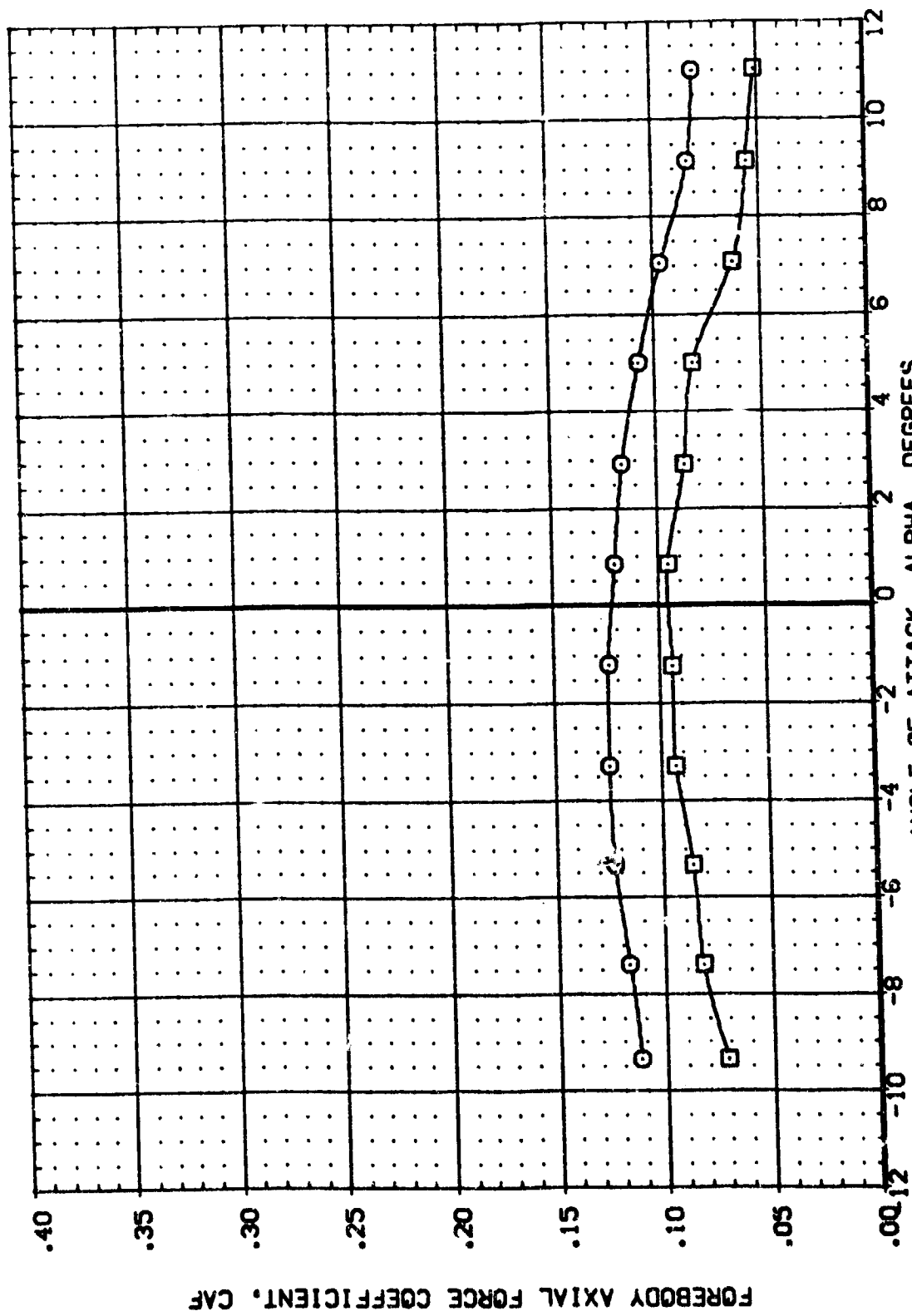
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(K)MACH = 4.96

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888009) MSFC 579(1A37) (034)(14)(S12)(U6)
 (888007) MSFC 579(1A37) (034)(19)(S12)

BETA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



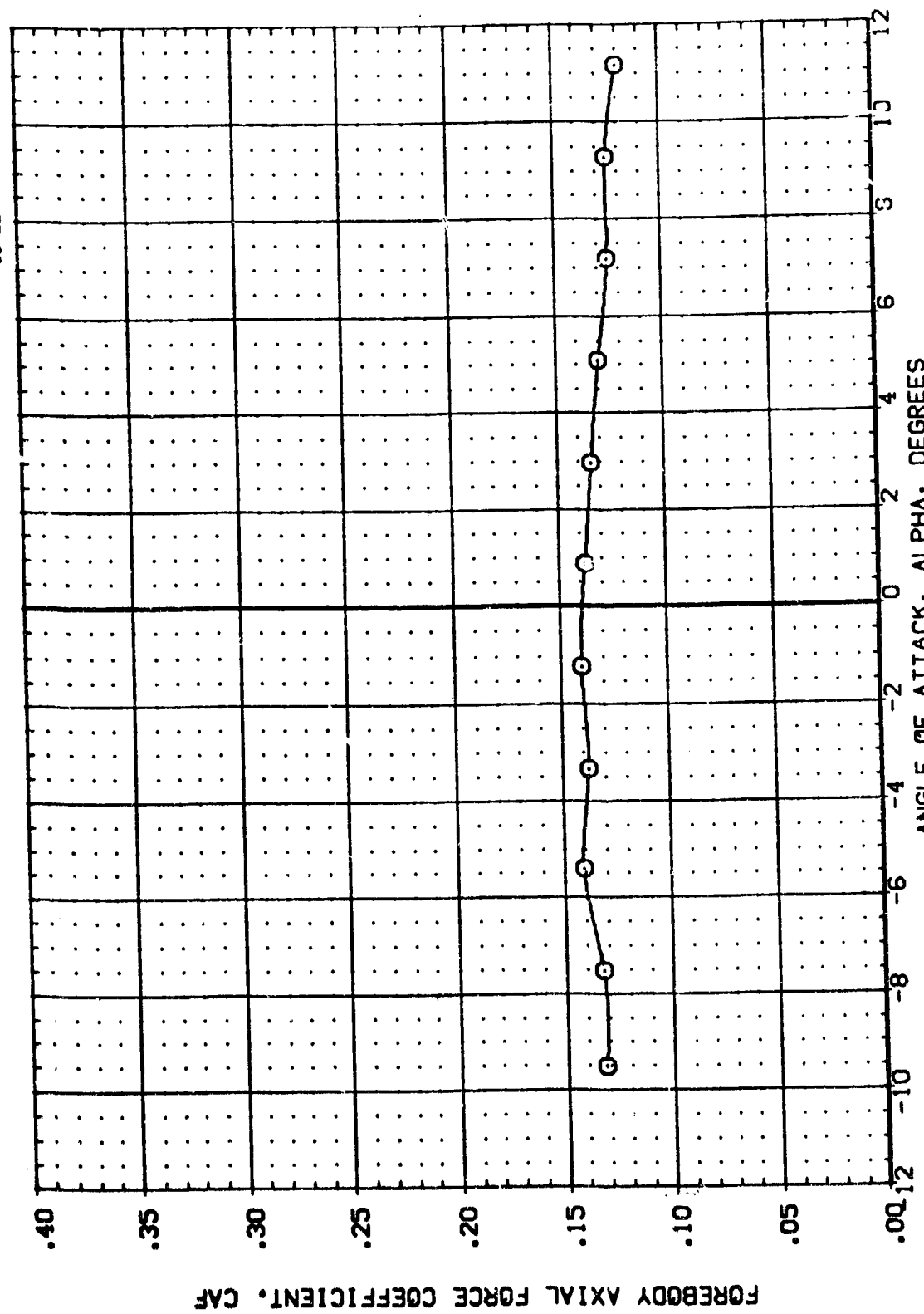
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(A)MACH = .60

DATA SET SYMBOL: 886005
 CONFIGURATION DESCRIPTION: MSFC 578(1A37) (C341)(T14)(S12)(U6)
 DATA NOT AVAILABLE

BETA: .000
 ORBING: .000

REFERENCE INFORMATION:
 SREF: 6.1980 IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

DATA SET SYMBOL: (880009) (880007)

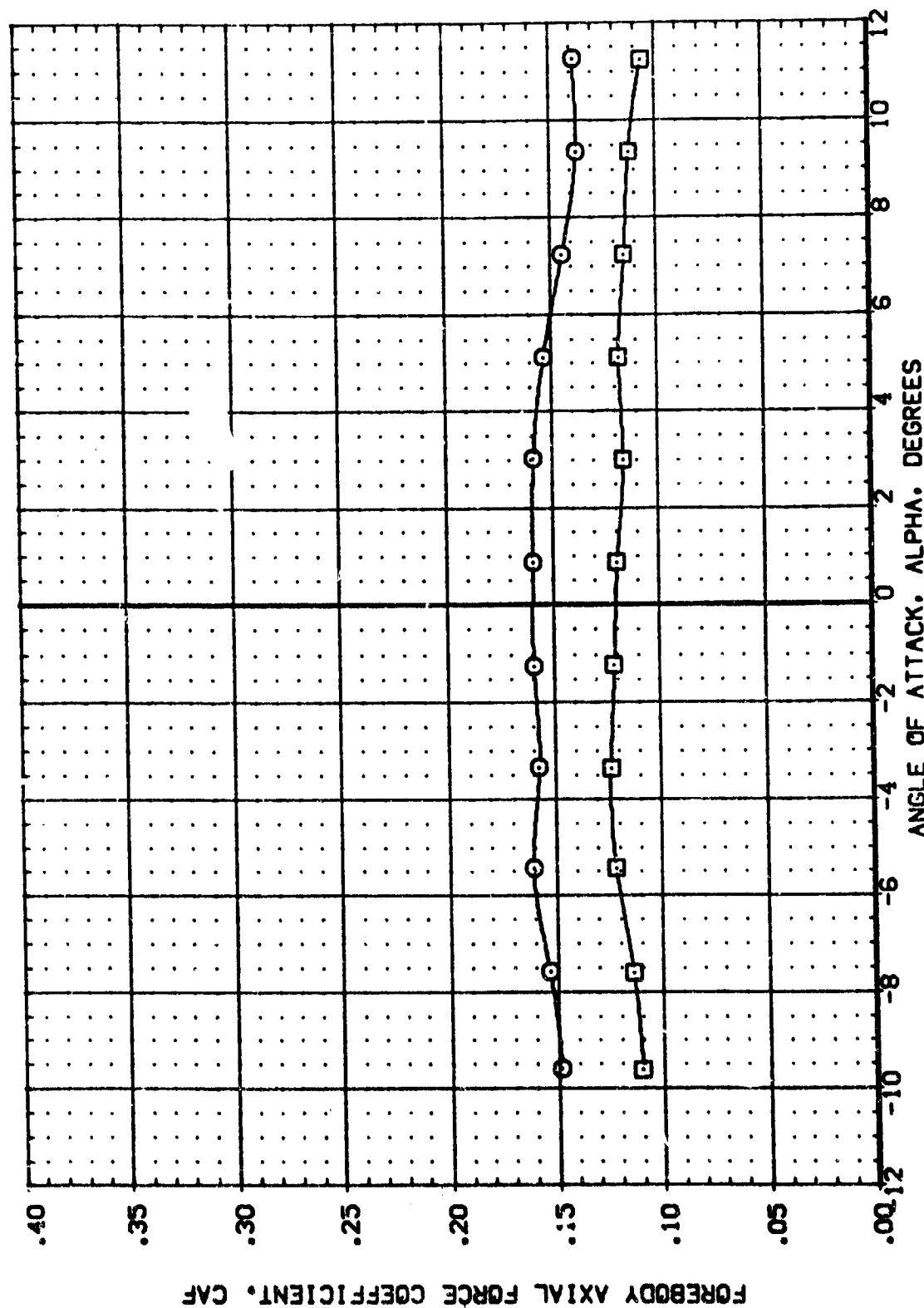
CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(114)(S12)(US) MSFC 579(1A37) (034)(119)(S12)

BETA: .000 .000

ORBIT: .000 .000

REFERENCE INFORMATION:

SREF	6.1980	50. IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.7200	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

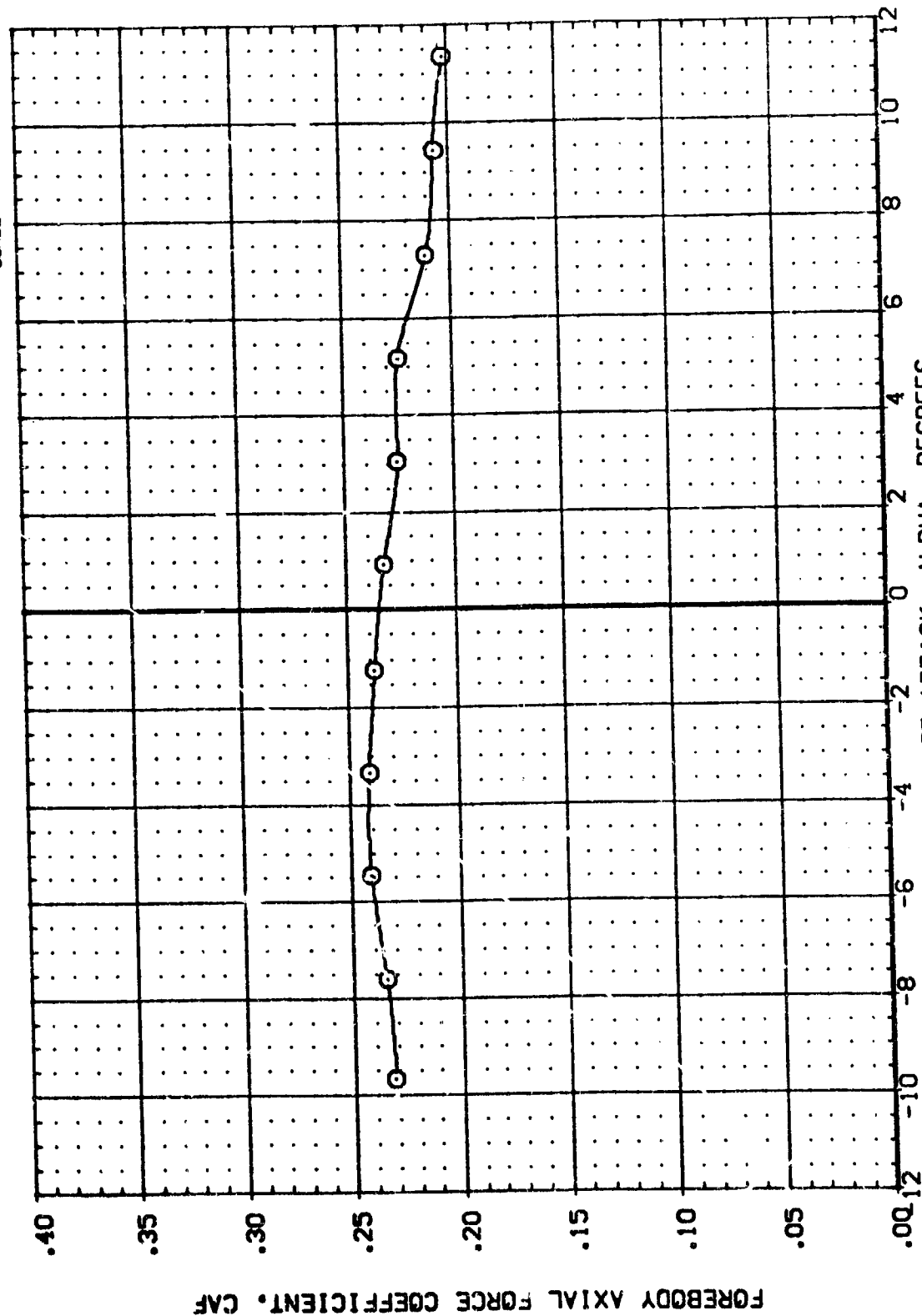
(C)MACH = .90



DATA SET SYMBOL (886009) (886007) CONFIGURATION DESCRIPTION MSC 579(1A37) (034)(114)(S12)(US) DATA NOT AVAILABLE

BETA .000
ORBITAL .000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



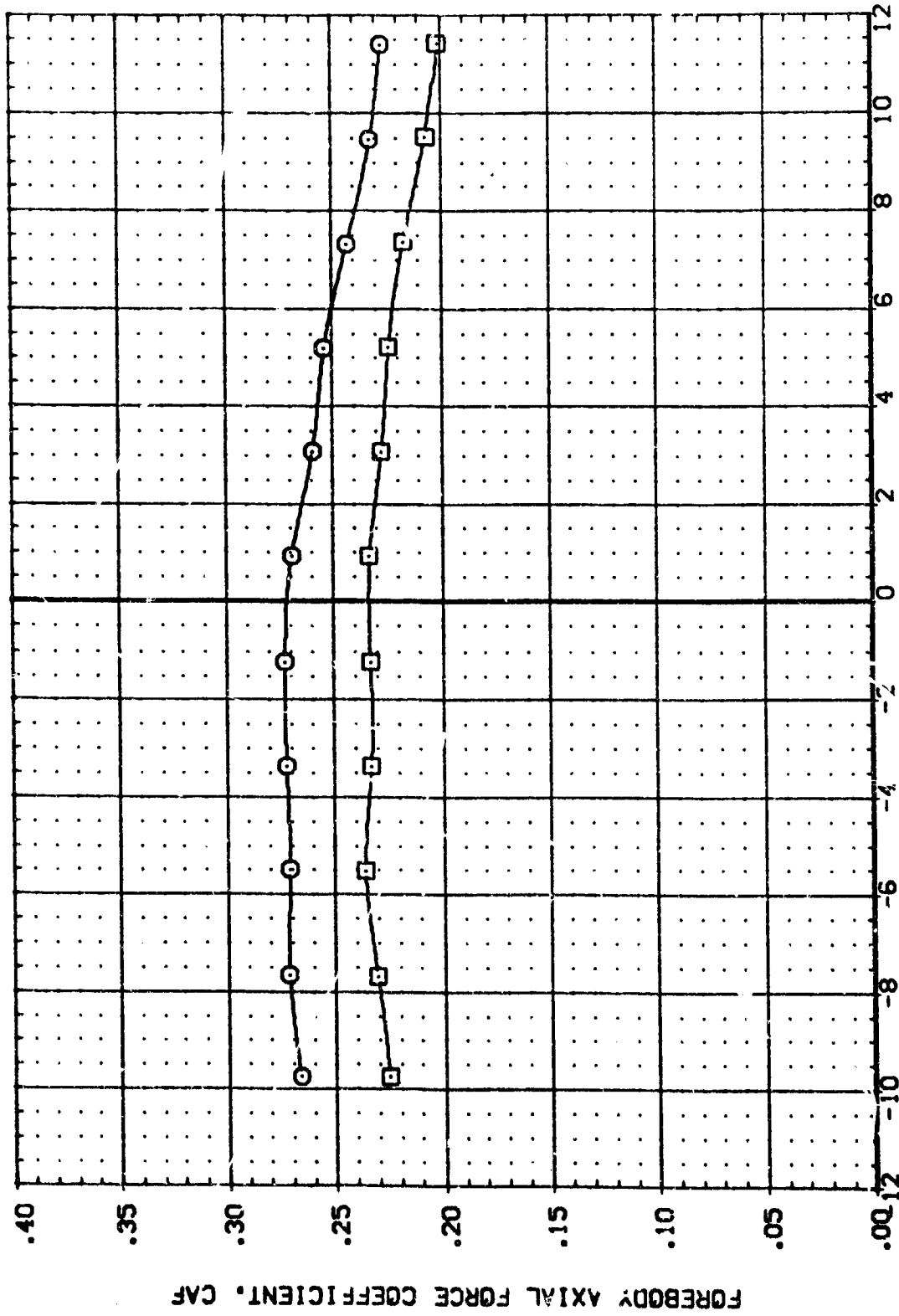
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(0)MACH = 1.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888009) MSFC 579(1A37) (034)(T14)(S12)(U6)
 (888007) MSFC 579(1A37) (034)(T19)(S12)

BETA ORIGIN
 .000 .000

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



ANGLE OF ATTACK, ALPHA, DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTRUSANCES ON LONG. CHARACT. (FIRST STAGE)

(C)MACH = 1.10

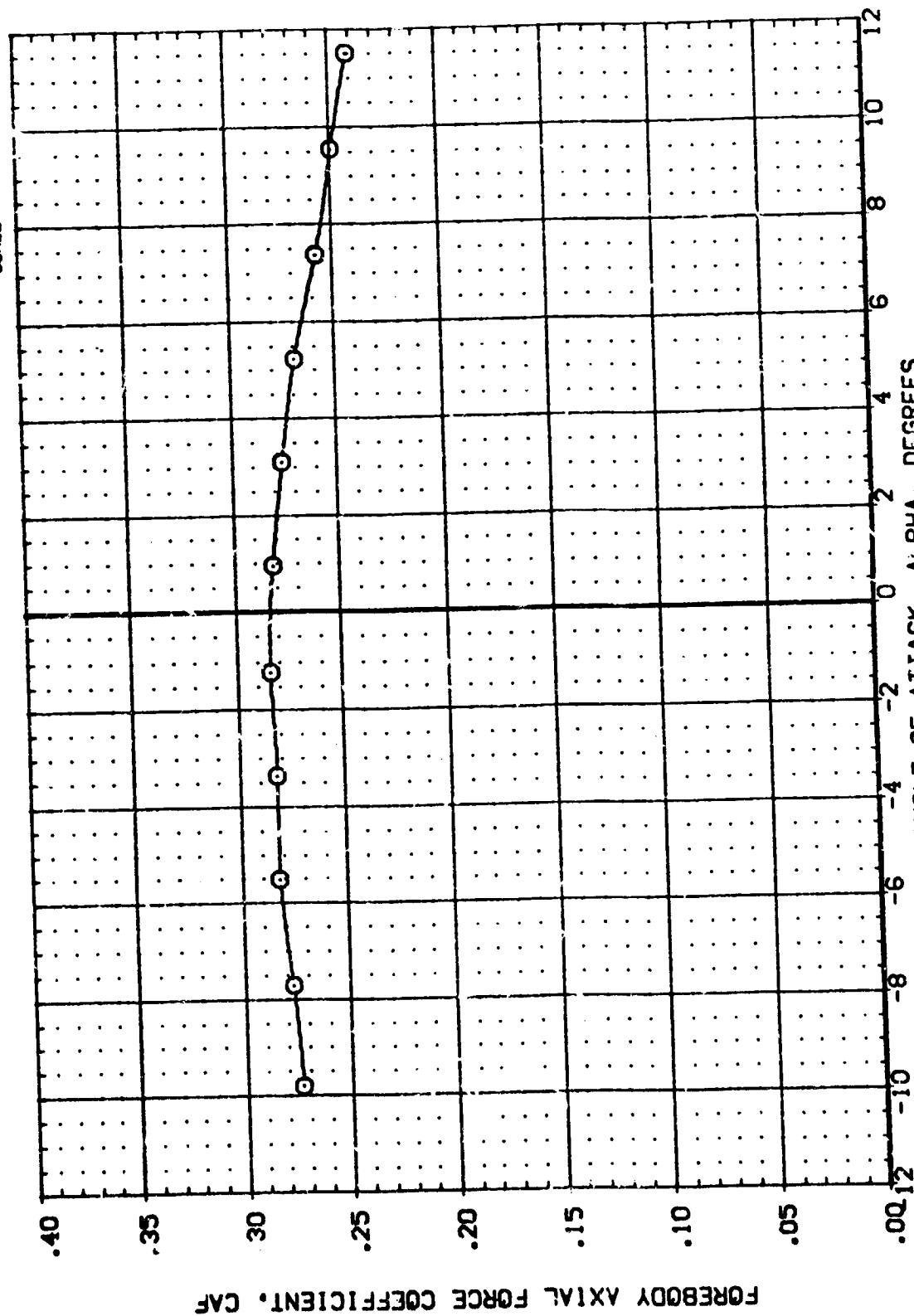
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DATA SET SYMBOL: (B88007)
CONFIGURATION DESCRIPTION: (B88007) (A37) (034) (Y14) (S12) (LG)
DATA NOT AVAILABLE

BETA: .000
SRBINC: .000

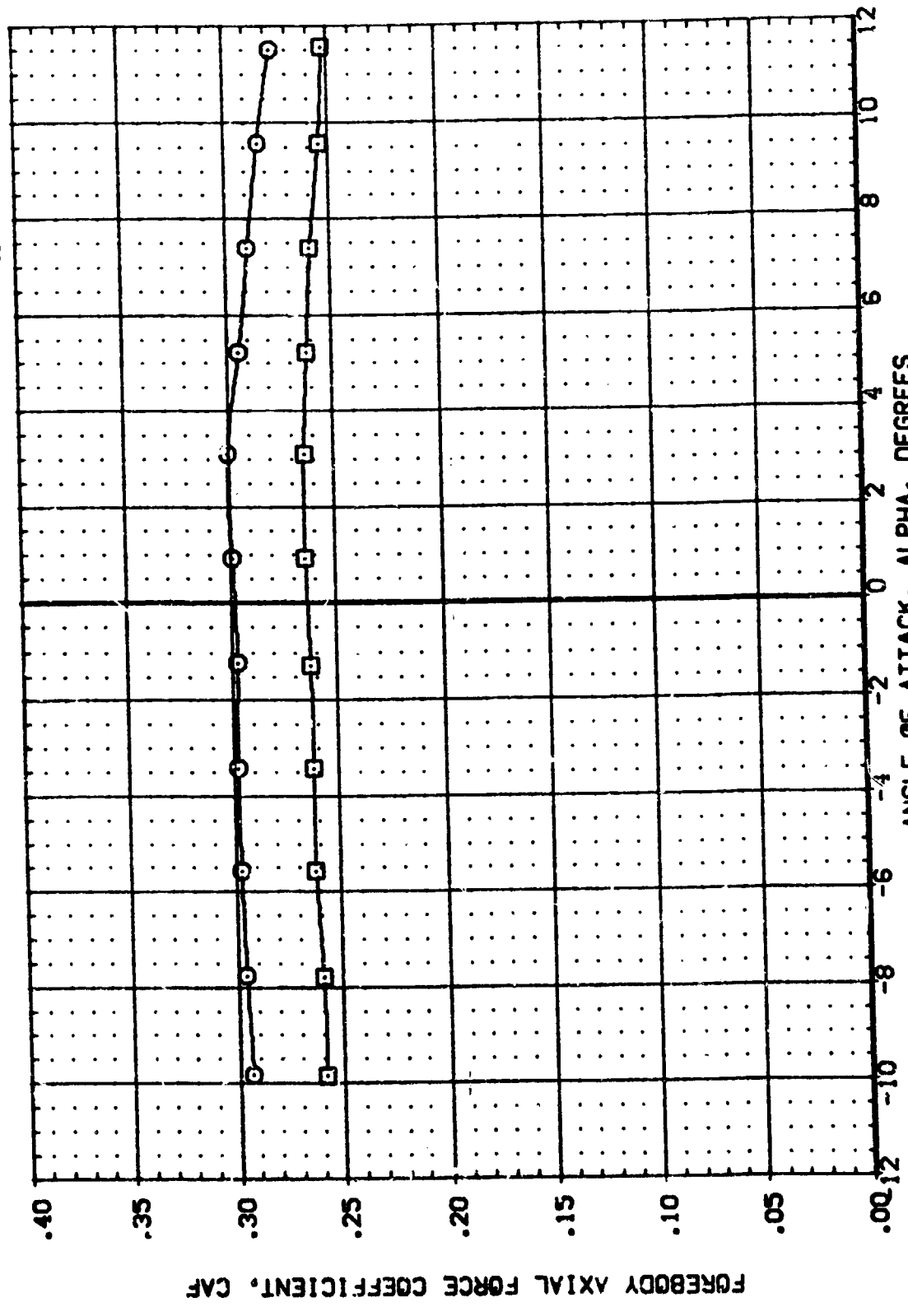
REFERENCE INFORMATION
SPREF: 6.1900 IN.
LREF: 6.1600 IN.
BREF: 5.1600 IN.
XMRP: 2.7200 IN.
YMRP: .0000 IN.
ZMRP: .0000 IN.
SCALE: .0710



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

DATA SET SYMBOL: **Q**
 CONFIGURATION DESCRIPTION:
 H5FC 375(1A37) (034)(114)(512)(16)
 H5FC 575(1A37) (034)(119)(512)

BETA: .000
 ORIGIN: .000
 REFERENCE INFORMATION:
 SREF: 6.1980 SO. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0010



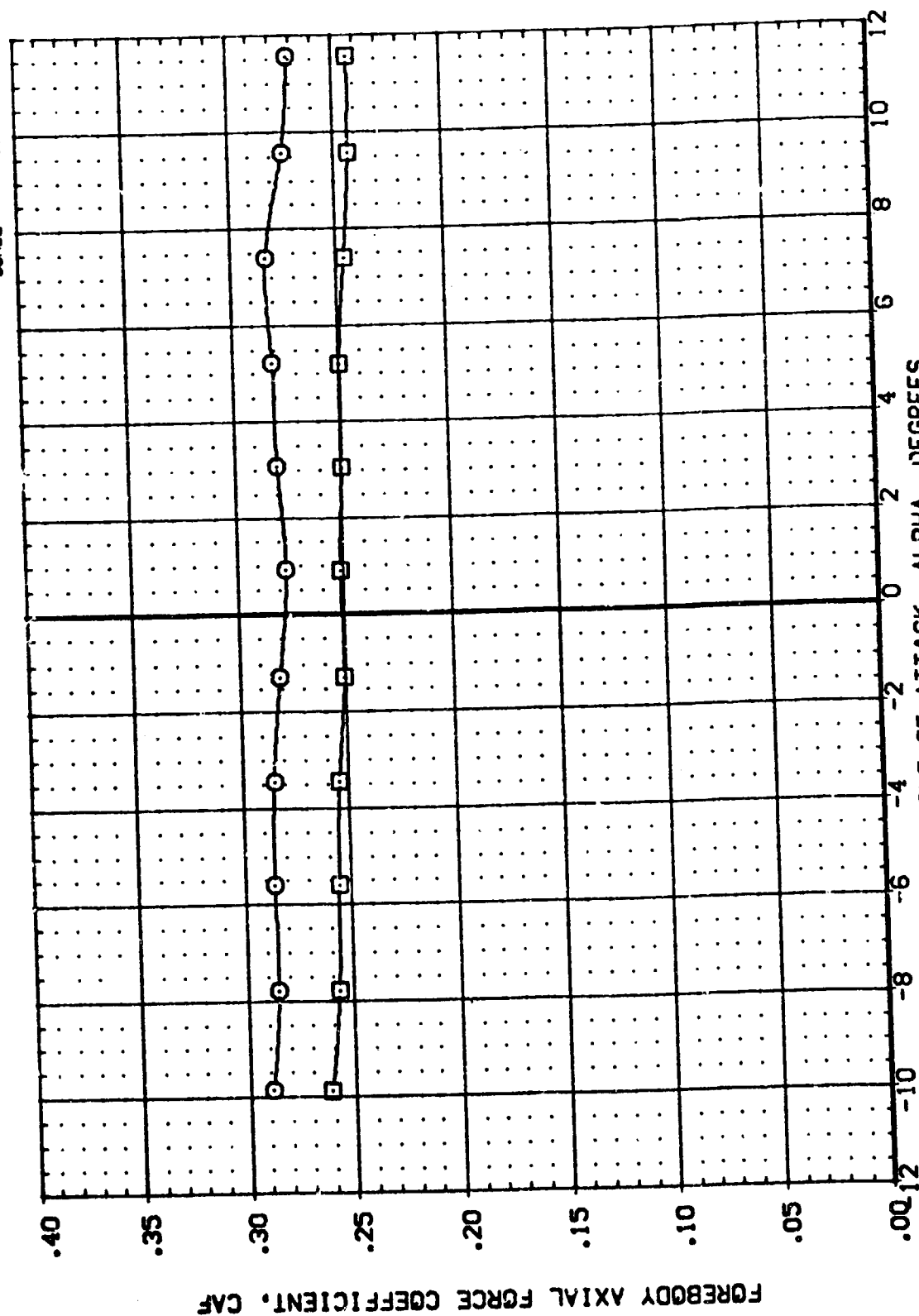
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
 (G)MACH = 1.46



DATA SET SYMBOL CONFIGURATION DESCRIPTION
(888009) H MSC 579(1A37) (034)(114)(S12)(U6)
(888007) H MSC 579(1A37) (034)(19)(S12)

BETA ORBINC
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1980 SQ.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



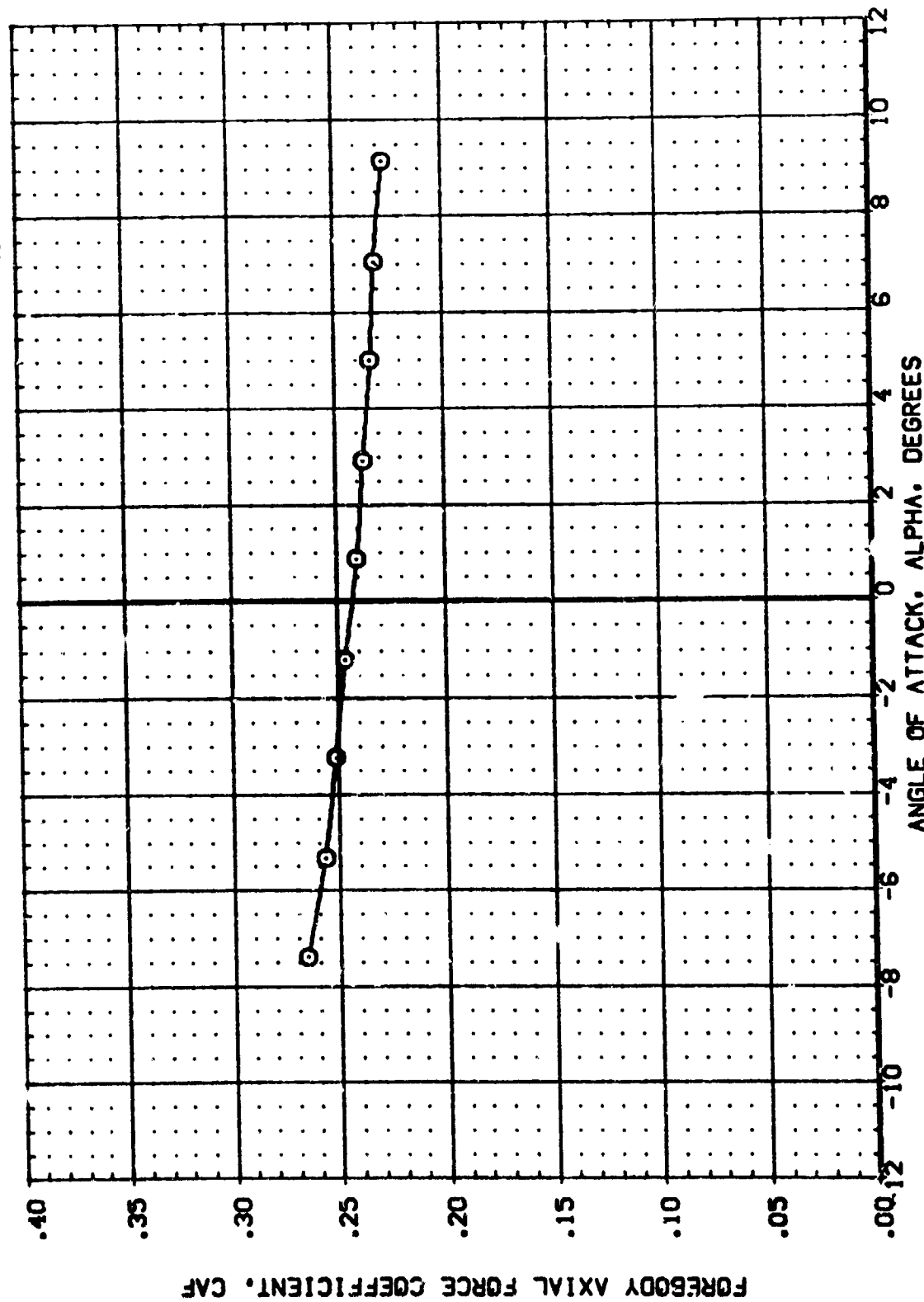
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(H)MACH = 1.96

DATA SET SYMBOL: 0000007
 CONFIGURATION DESCRIPTION: MSFC ST. (1A37) (034)(T14)(S12)(US)
 DATA NOT AVAILABLE

BETA: .000
 DRBINC: .000

REFERENCE INFORMATION
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPRP: 2.7200 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0040



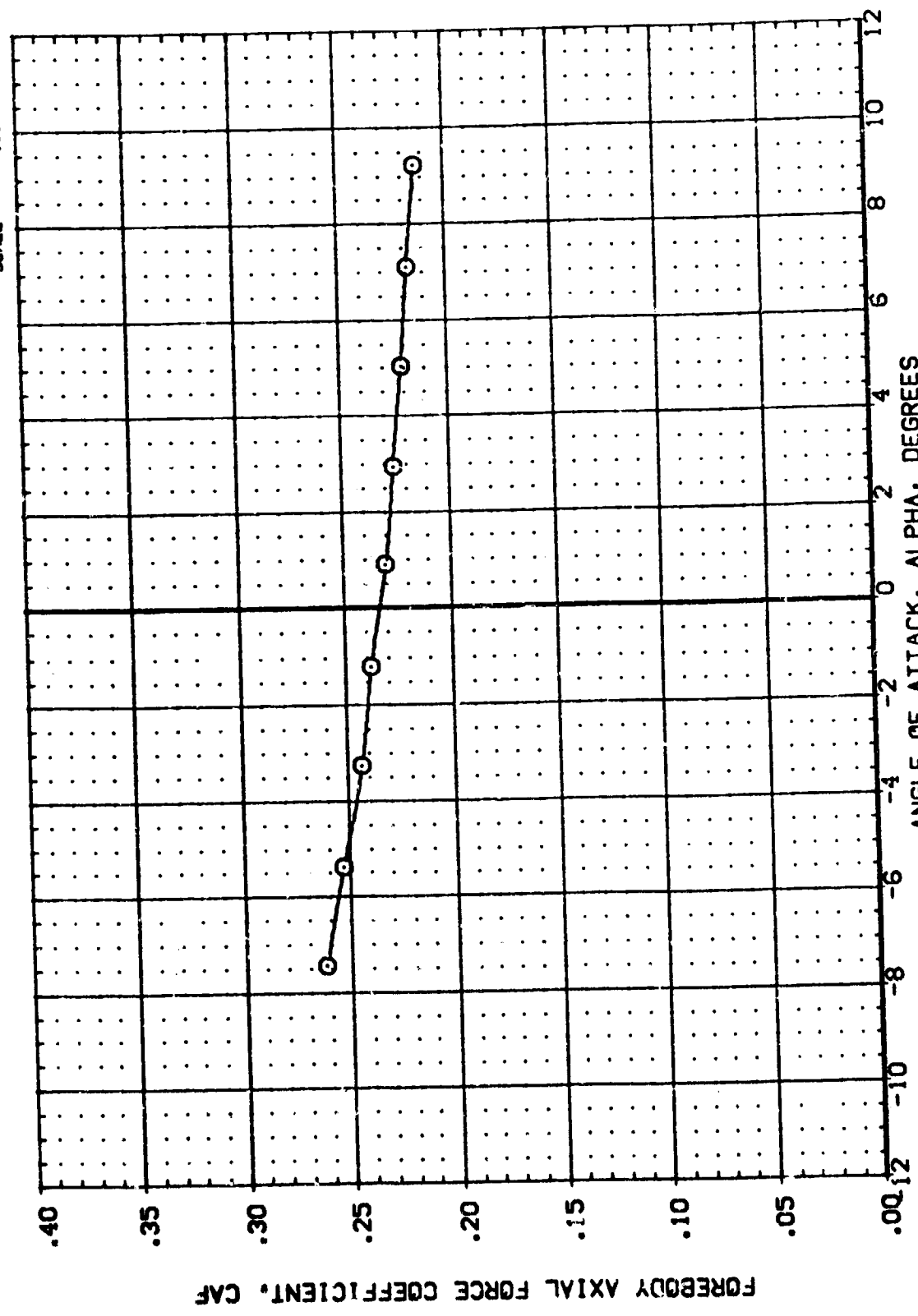
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(1)MACH = 2.99

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

BETA .000
 ORBINC .000

DATA SET SYMBOL (B88009)  CONFIGURATION DESCRIPTION
 HSEC 579(1A37) (034)(14)(512)(U6)
 DATA NOT AVAILABLE



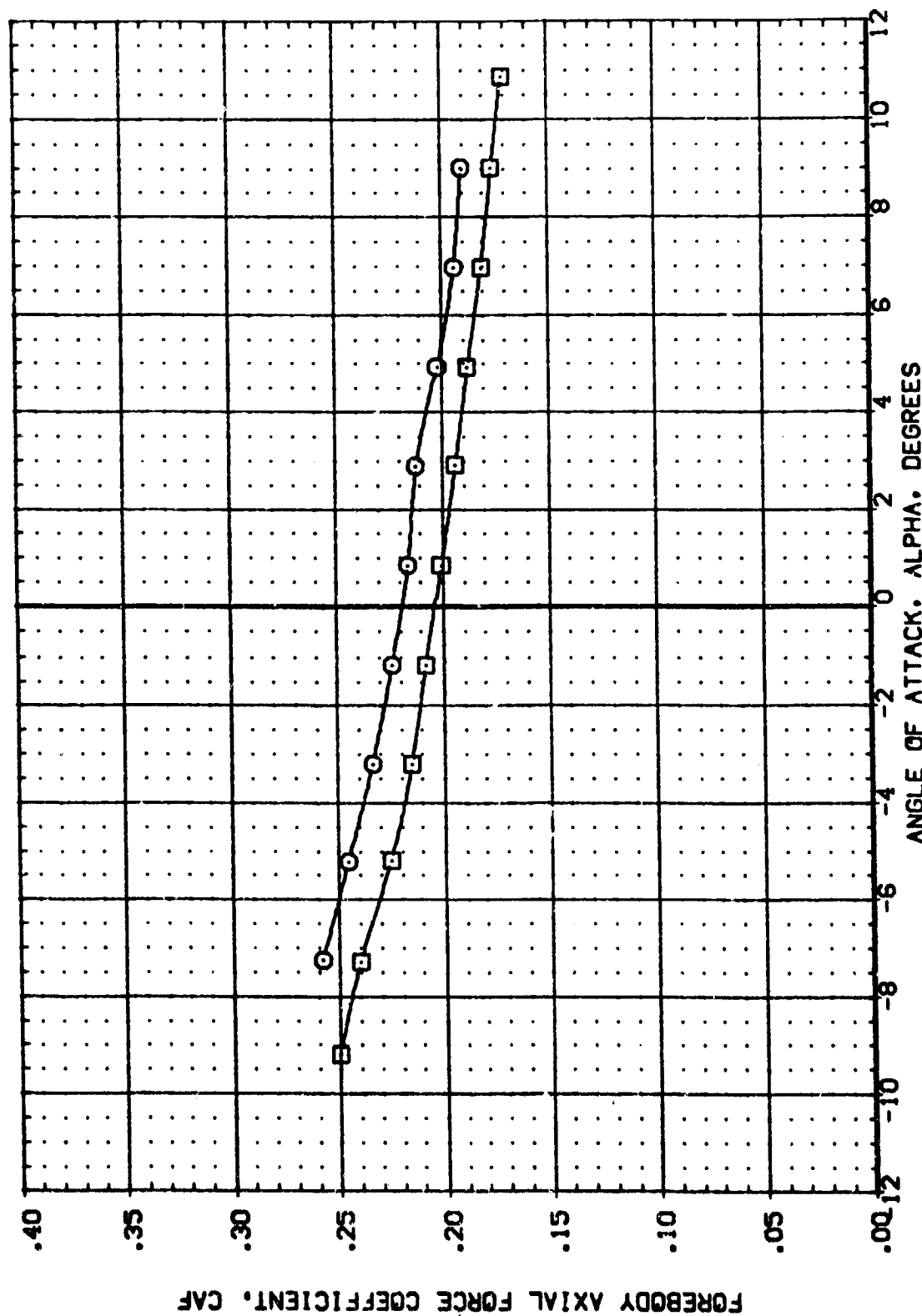
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(J)MACH = 3.48

DATA SET SYMBOL: H
 CONFIGURATION DESCRIPTION:
 HSEC 573(A37) (034)(T14)(S121)(U6)
 HSEC 573(A37) (034)(T9)(S12)

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

BETA 0.000
 ORBING 0.000



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(K)MACH = 4.96

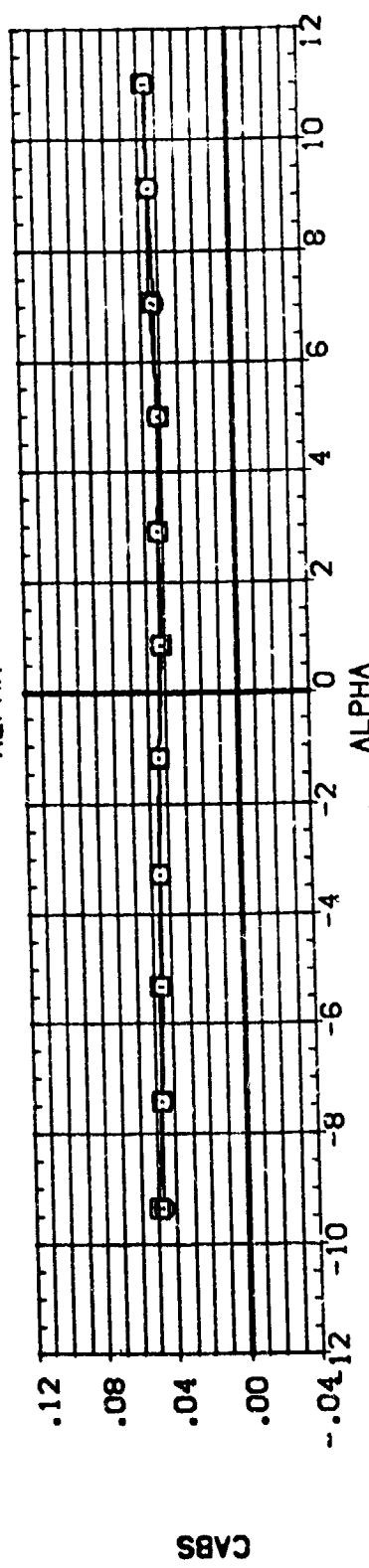
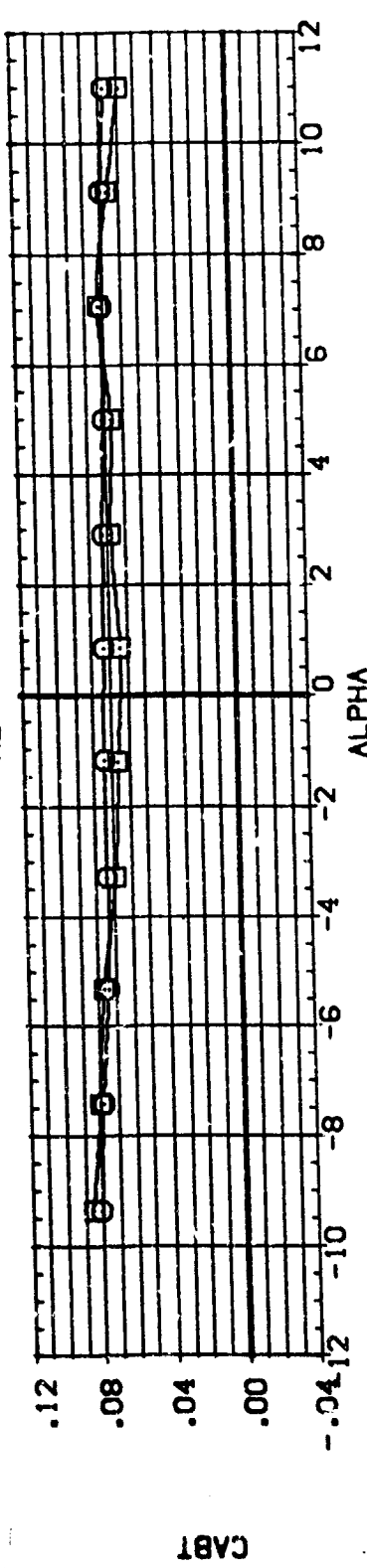
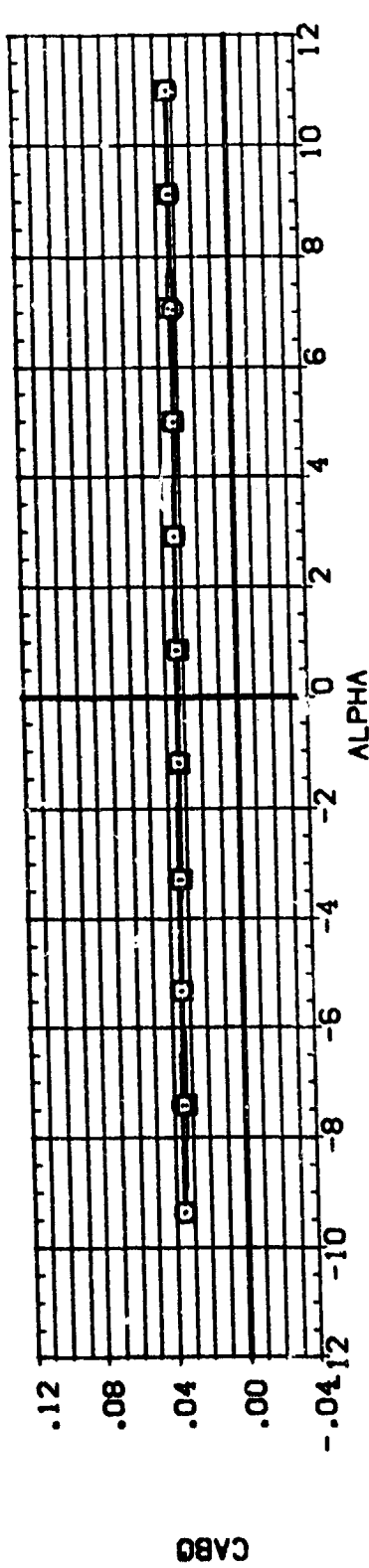


DATA SET SYMBOL
(B88009)
(B88007)

CONFIGURATION DESCRIPTION
MSFC 579(A37) (034)(T14)(S12)(S)
MSFC 579(A37) (034)(T9)(S12)

BETA ORBING
.000
.000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



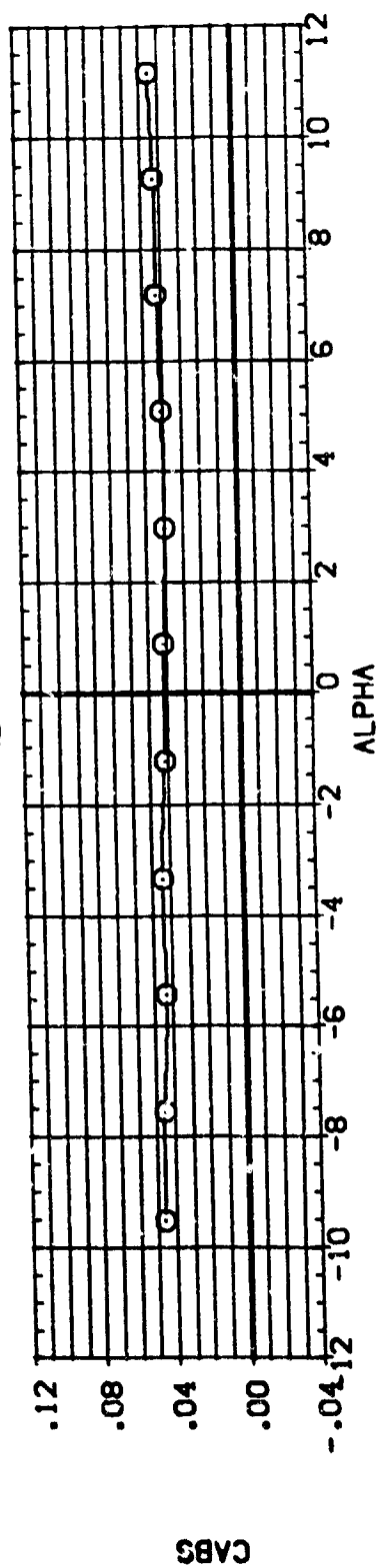
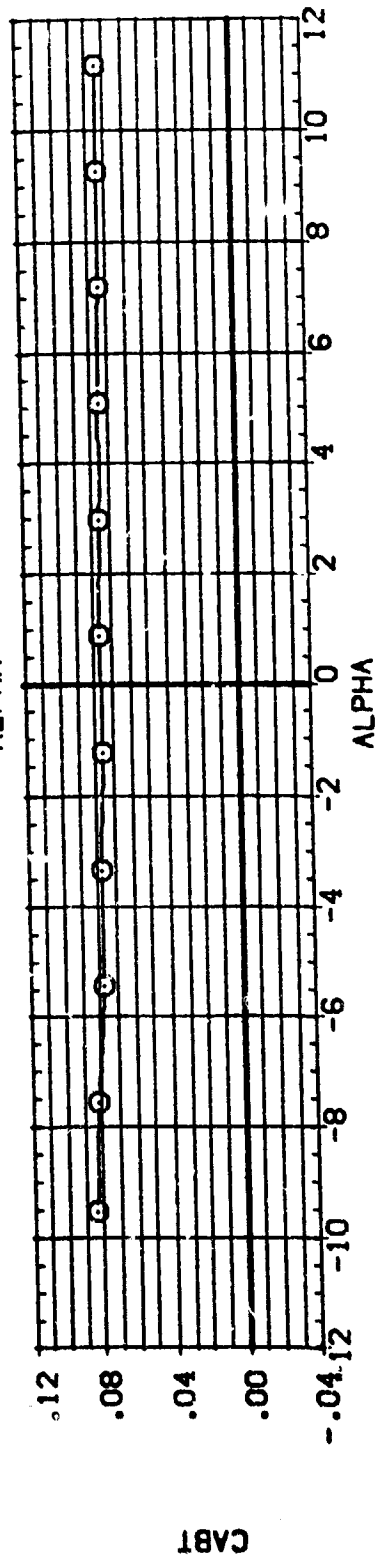
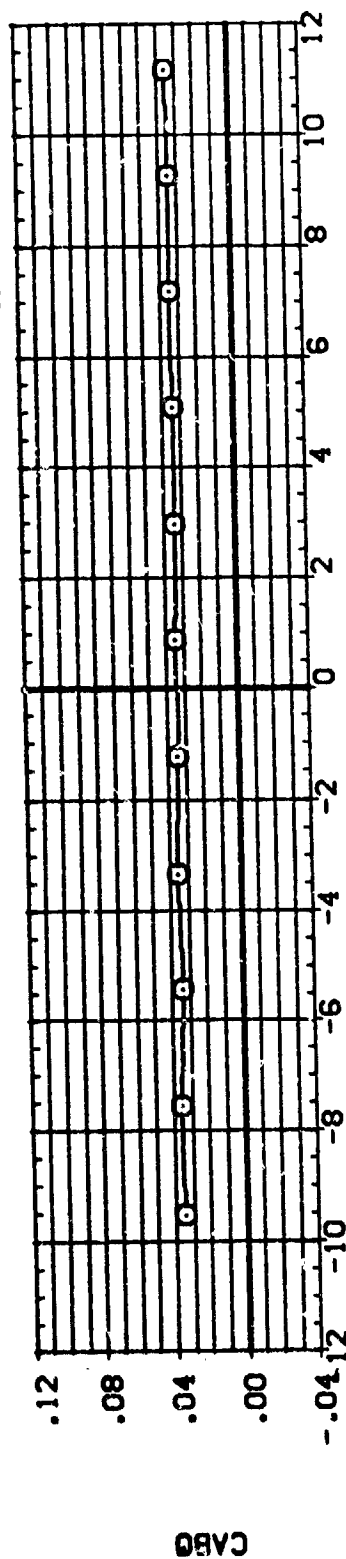
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(A)MACH = .60

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION:
 (885209) MSFC 579 (A37) (034) (T14) (S12) (US)
 (288007) DATA NOT AVAILABLE

BETA ORBING
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

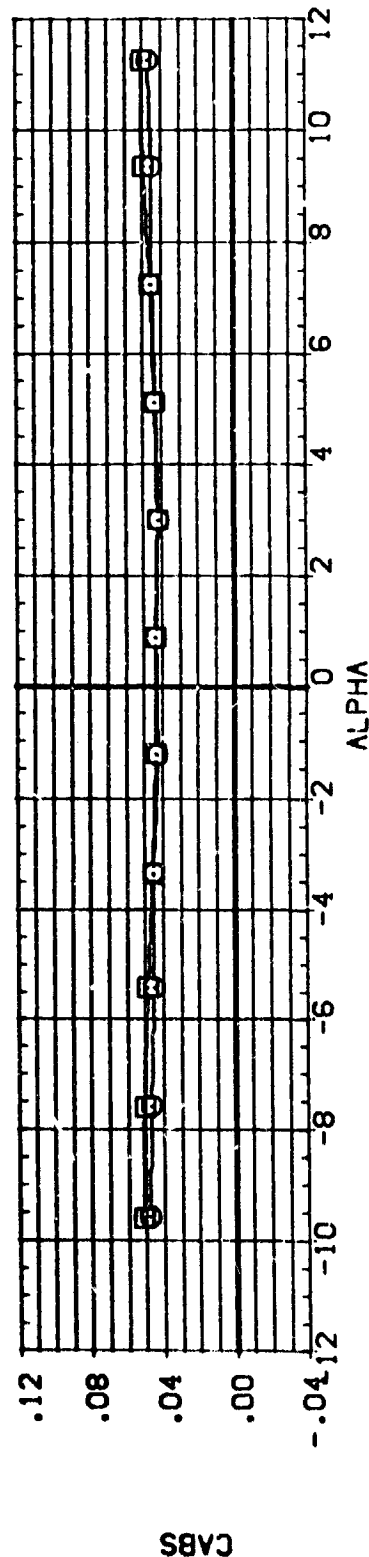
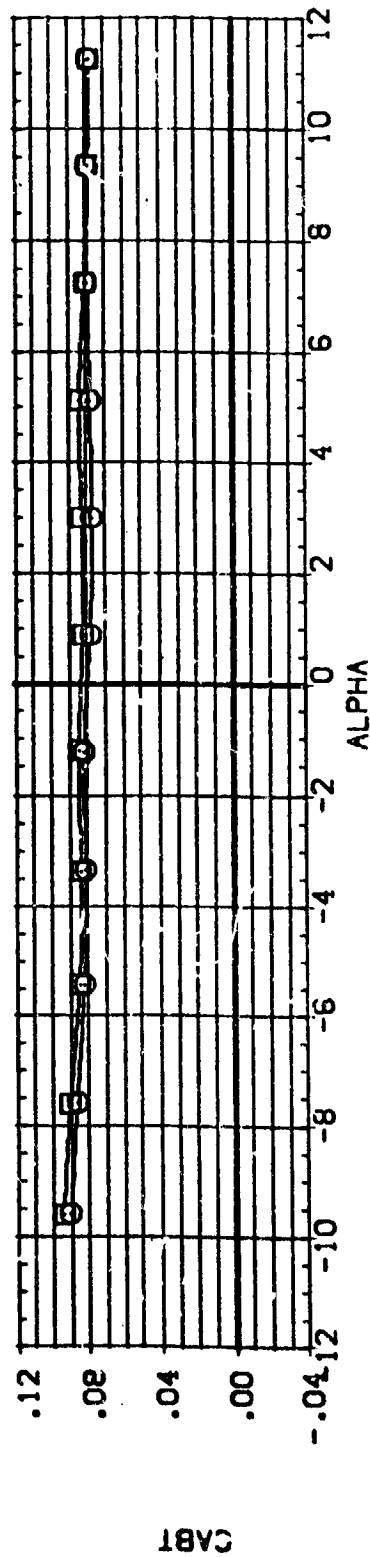
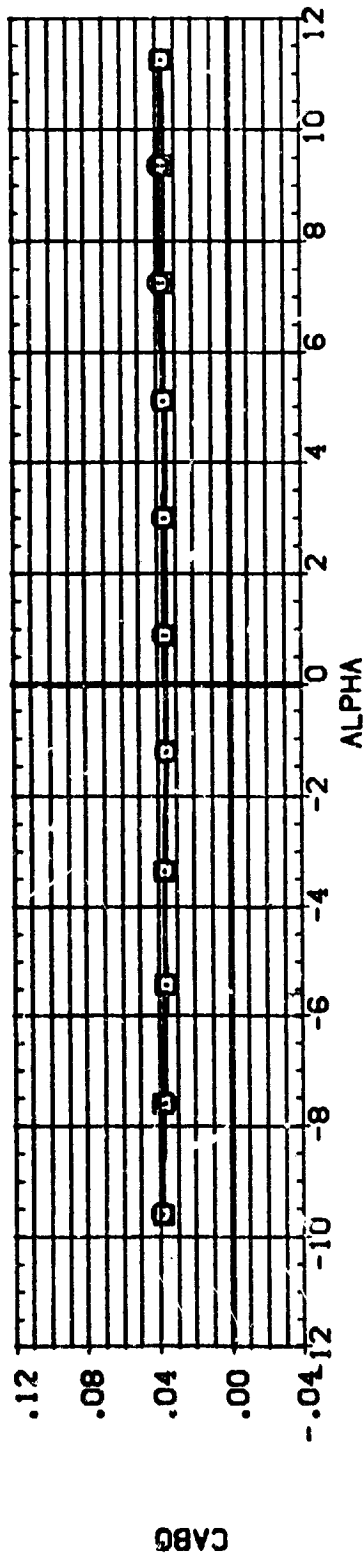
(B)MAC-H = .80



DATA SET SYMBOL CONFIGURATION DESCRIPTION
(S98009) ☐ MSC 579(1A37) (G34)(114)(S12)(US)
(886007) MSC 579(1A37) (G34)(19)(S12)

BETA ORBING
.000
.000

REFERENCE INFORMATION
SREF 6.1380 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0010



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

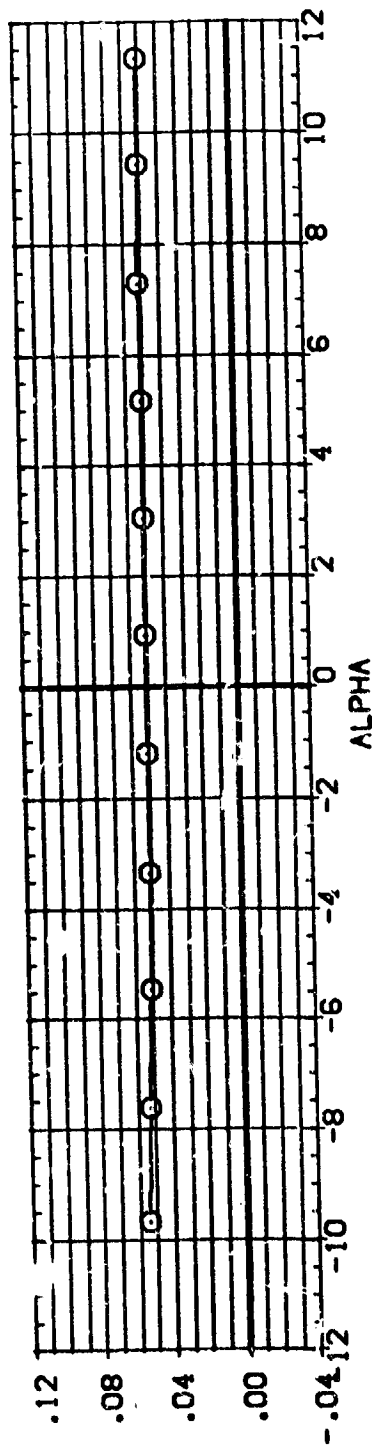
(C)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B860009) □ HSC 579(1A37) (034)(T14)(S12)(US)
 (B860007) DATA NOT AVAILABLE

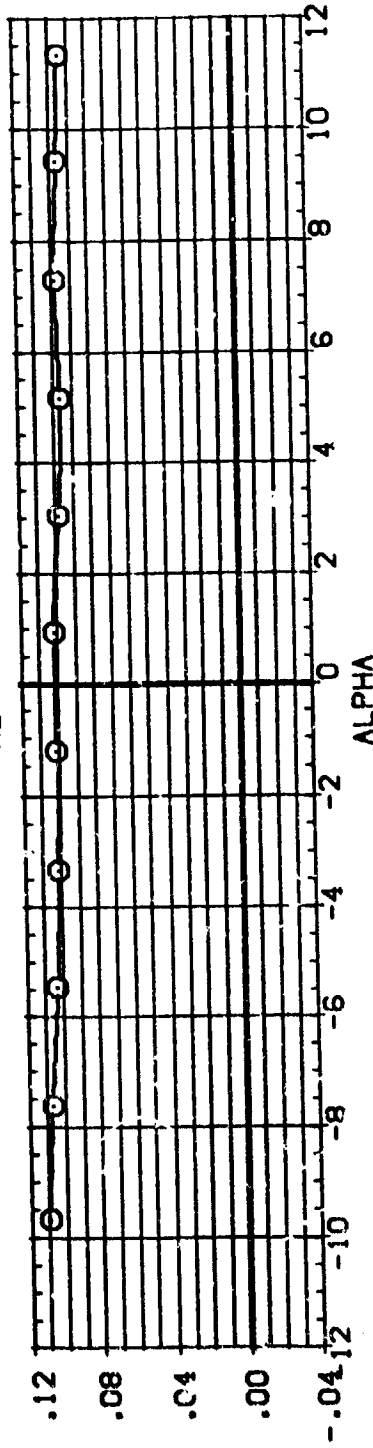
BETA DRBINC
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

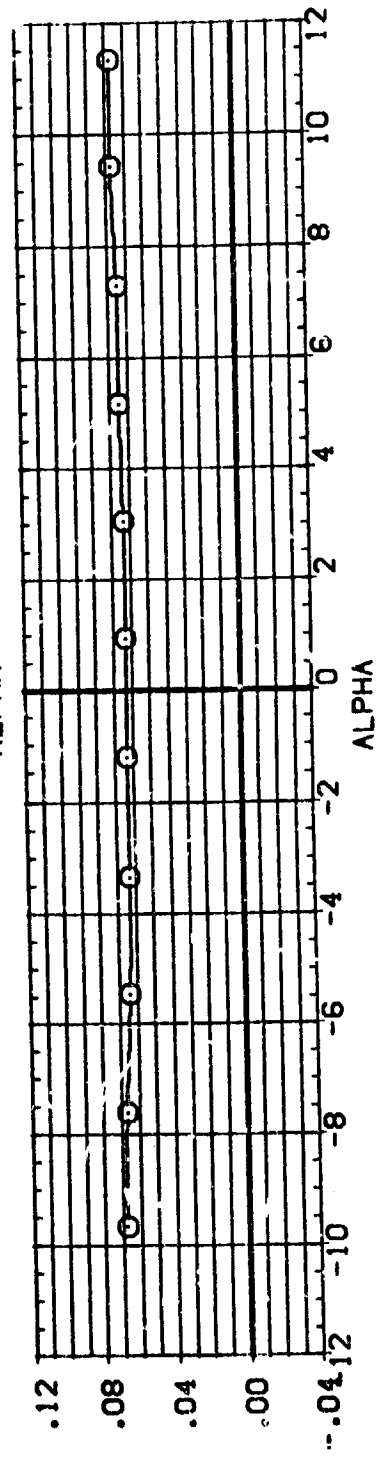
CABO



CABT



CABS



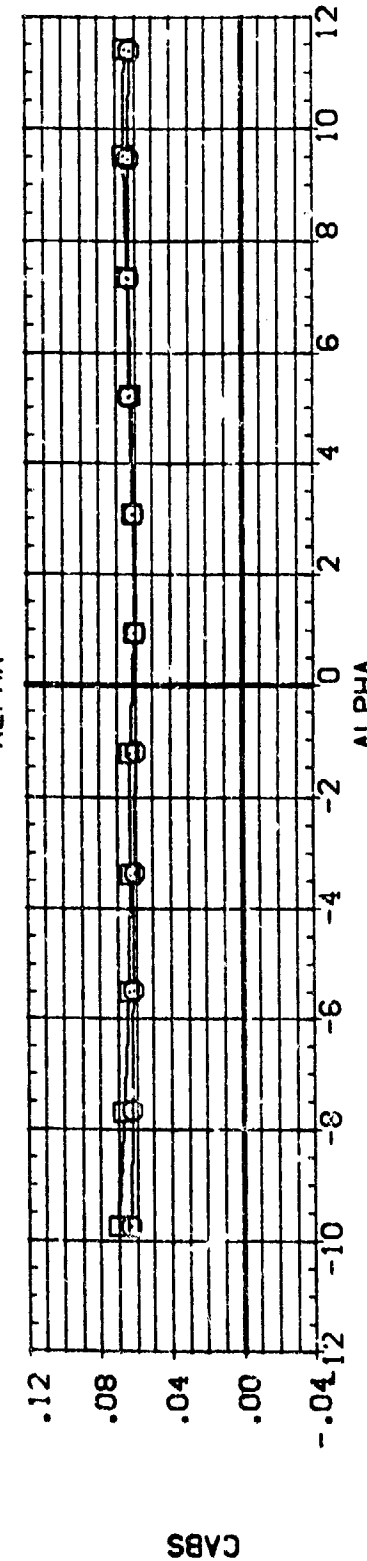
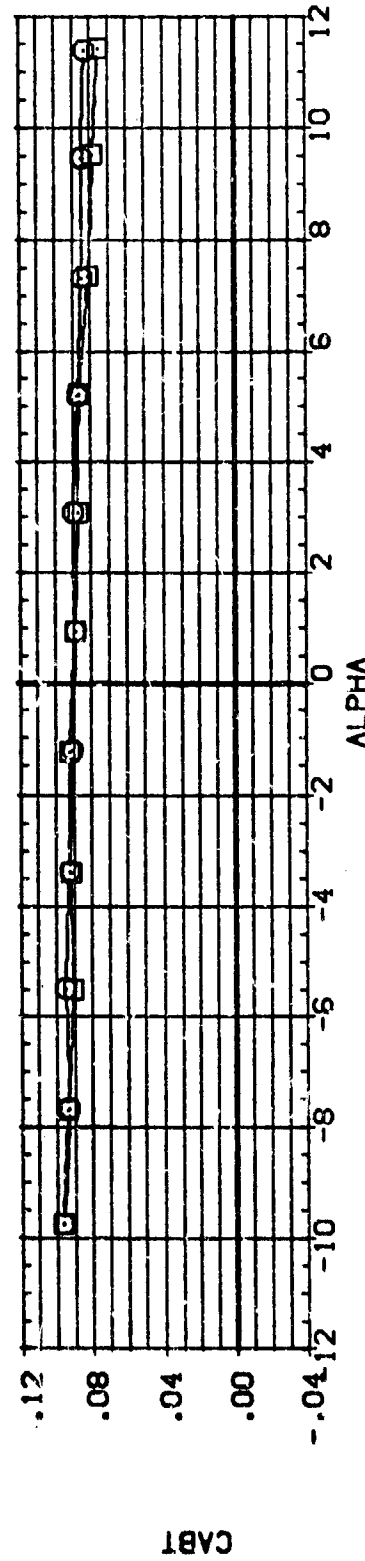
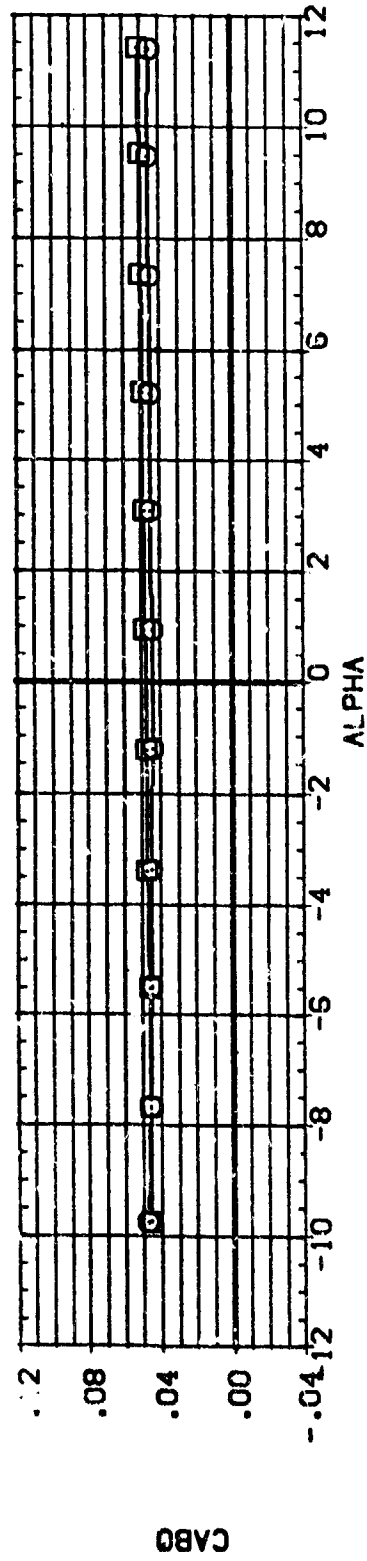
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(O)MACH = 1.00



DATA SET SYMBOL CONFIGURATION DESCRIPTION BETA ORBINC REFERENCE INFORMATION

[888009]	MSFC 579(A37) (034)(T14)(S12)(U6)	.002	.000	SREF 6.1990 SQ.IN.
[888007]	MSFC 579(A37) (034)(T9)(S12)	.000	.000	LREF 5.1600 IN.
				BREF 5.1600 IN.
				XTRP 2.7200 IN.
				YTRP .0000 IN.
				ZTRP .0000 IN.
				SCALE .0040



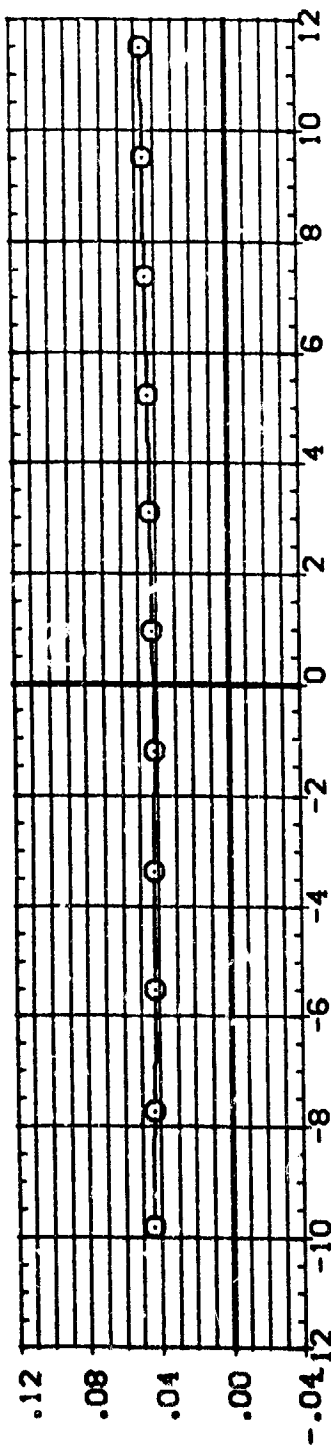
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(E)MACH = 1.10

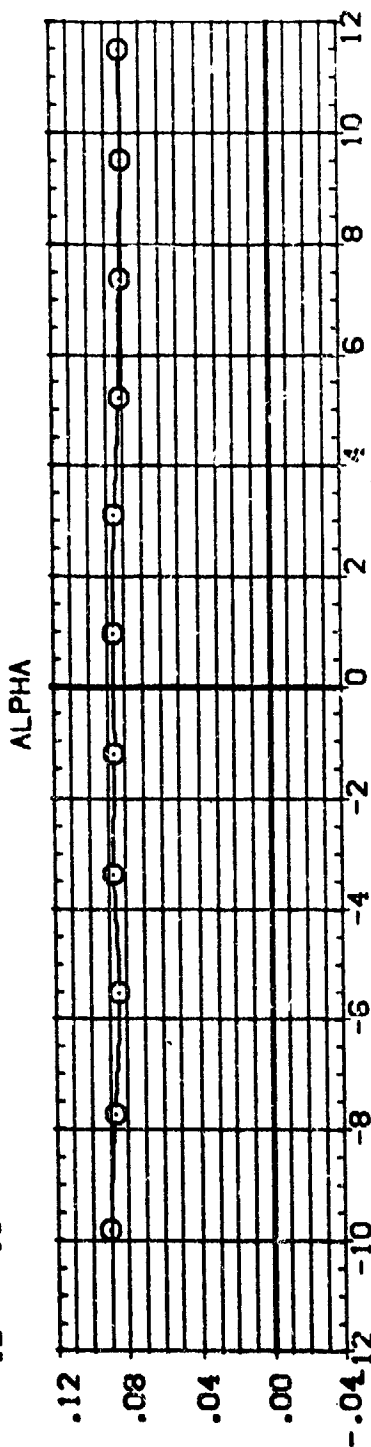
DATA SET SYMBOL: [B880009] [B880007]
 CONFIGURATION DESCRIPTION: HSC 579(1A37) (034)(114)(S12)(U6)
 DATA NOT AVAILABLE

BETA: .000
 ORBING: .000

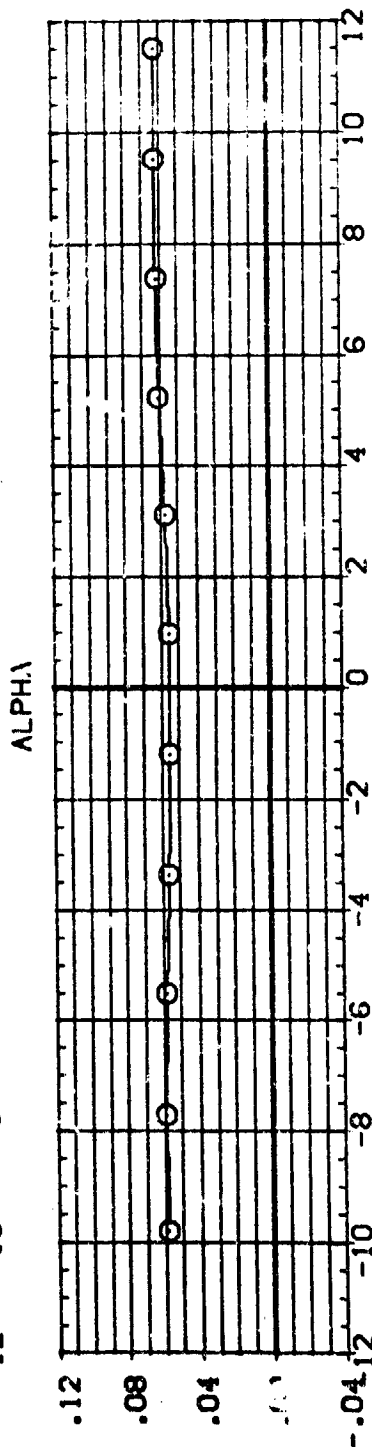
REFERENCE INFORMATION:
 SREF: 6.1980 IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XTRP: 2.7200 IN.
 YTRP: .0000 IN.
 ZTRP: .0000 IN.
 SCALE: .0040



CAB0



CAB1



CAB5

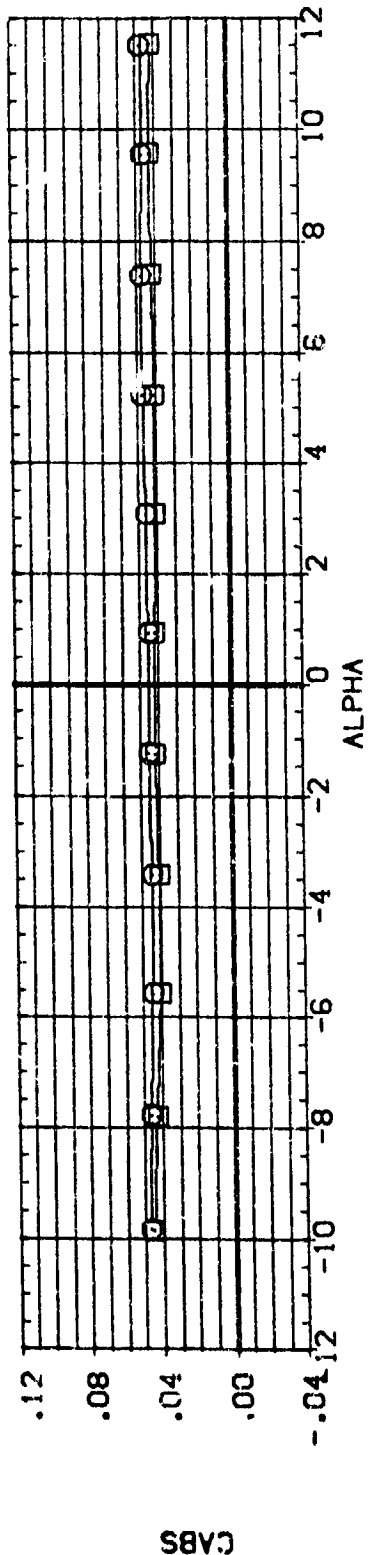
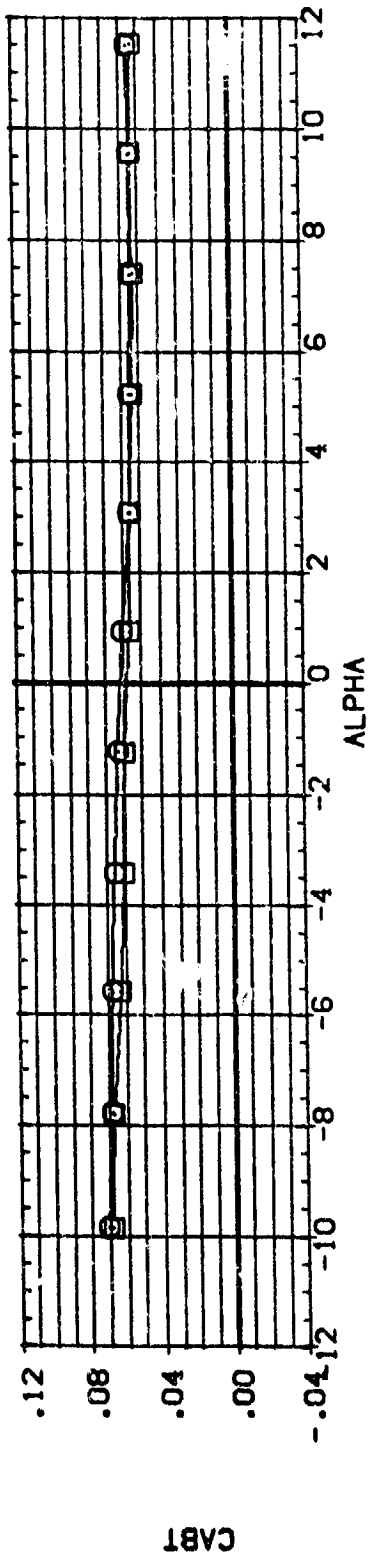
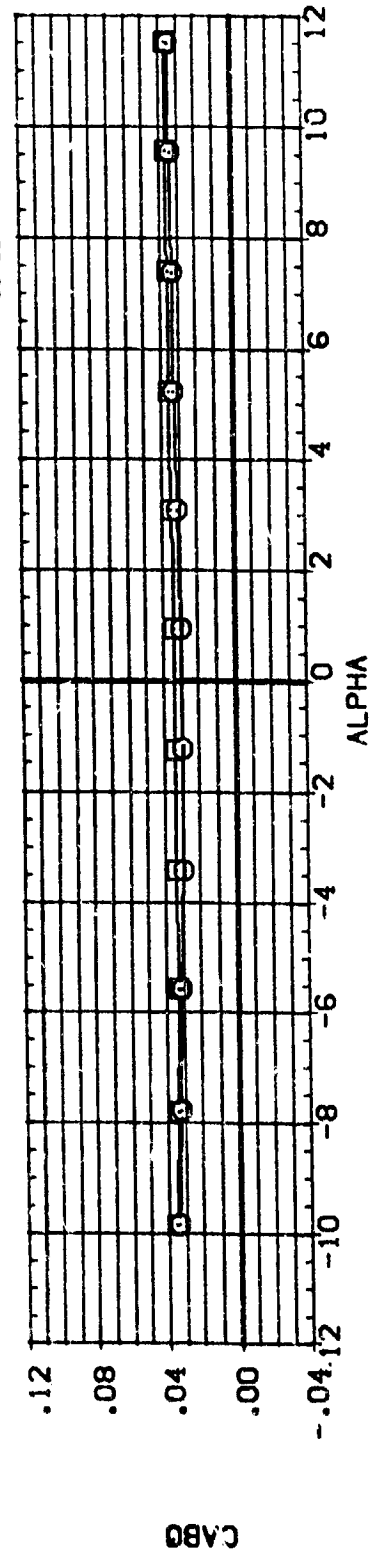
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(F)MACH = 1.20

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88009) ☐ M5C 579(1A37) (034)(114)(S12)(L6)
 (B88007) ☐ M5C 579(1A37) (034)(191)(S12)

BETA ORBINC
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YPRP 2.7200 IN.
 ZPRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCE ON LONG. CHARACT. (FIRST STAGE)

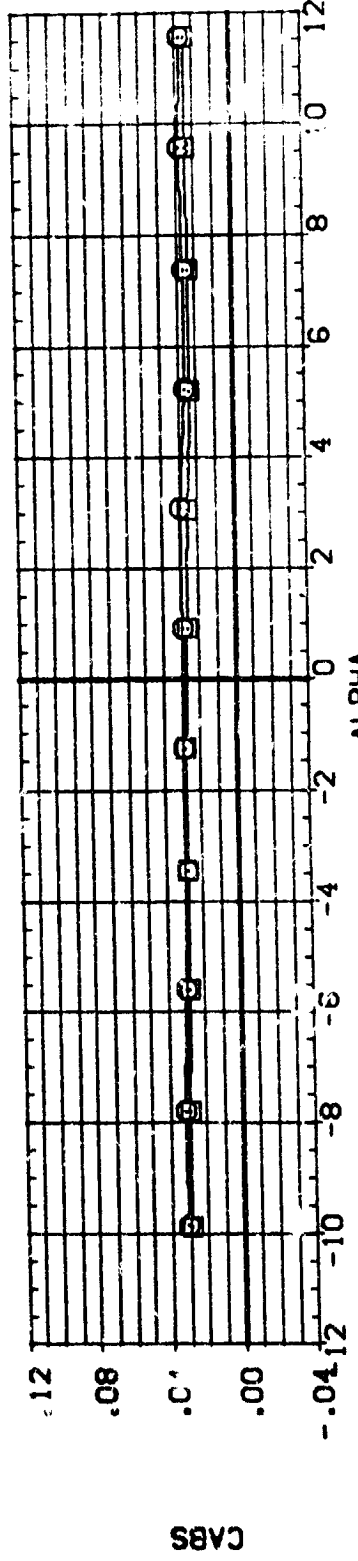
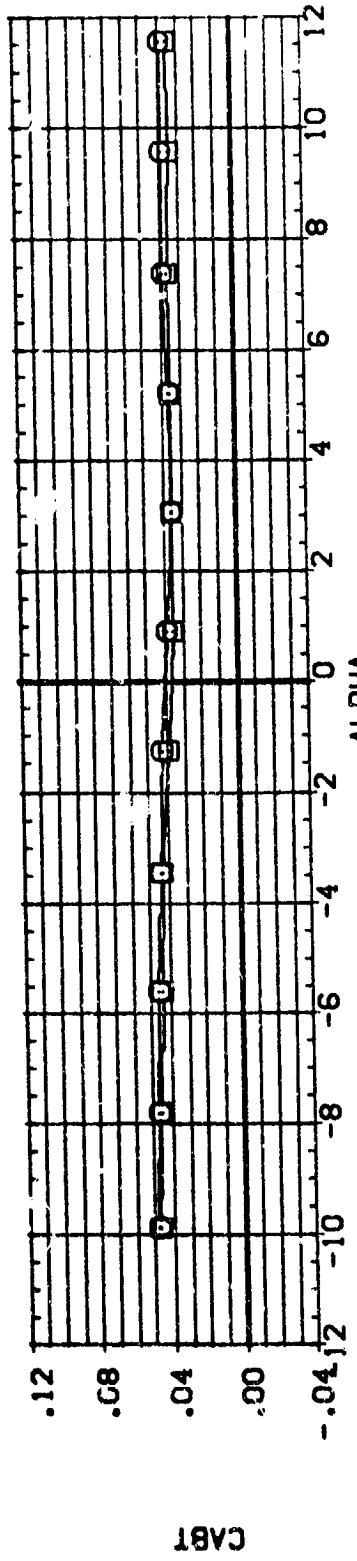
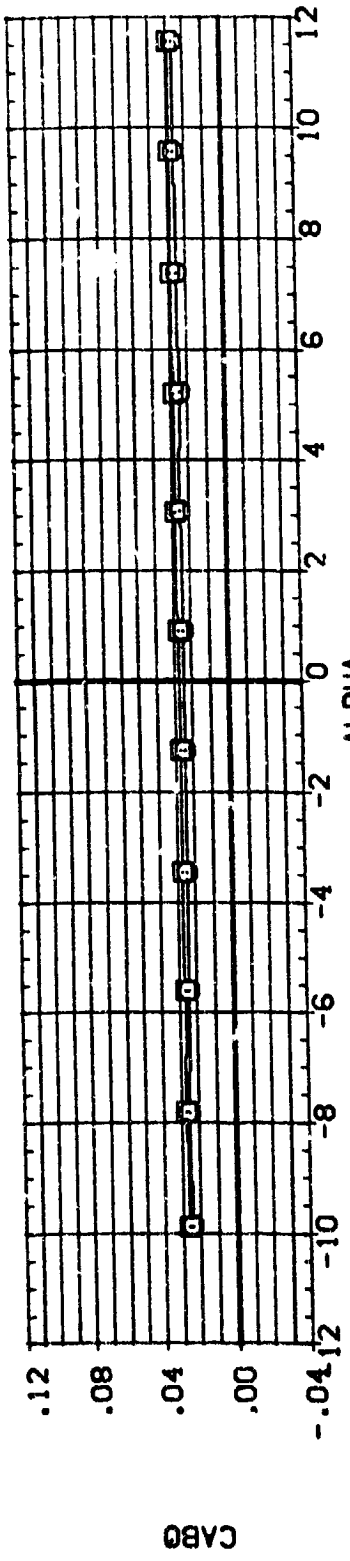
DATA SET SYMBOL (888009) (888007) ☐

CONFIGURATION DESCRIPTION
 MSC 579(1A37) (034)(14)(S12)(U6)
 MSC 579(1A37) (034)(19)(S12)

BETA 0.000 0.000

ORBITAL 0.000 0.000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF 0.0000 IN.
 ZREF 0.0000 IN.
 SCALE 0.0010



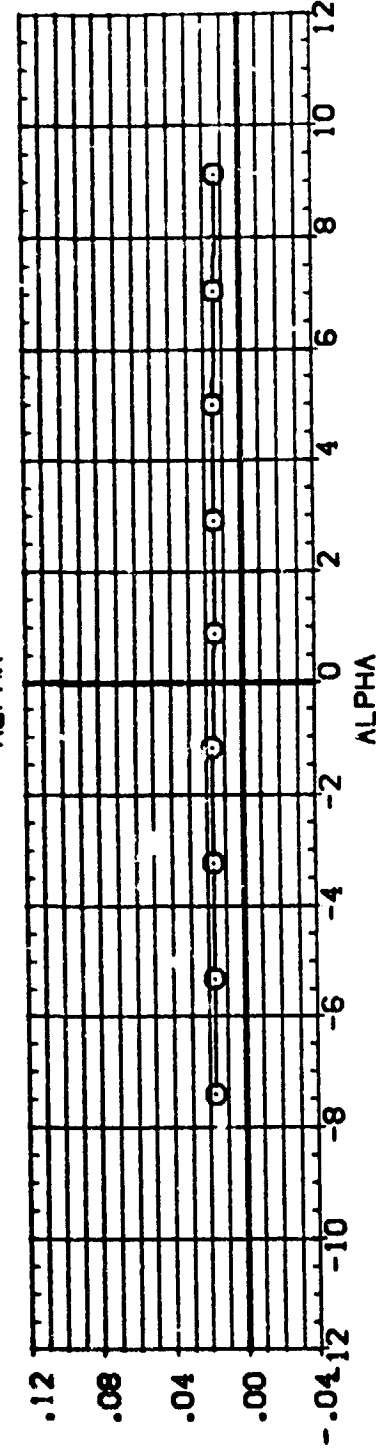
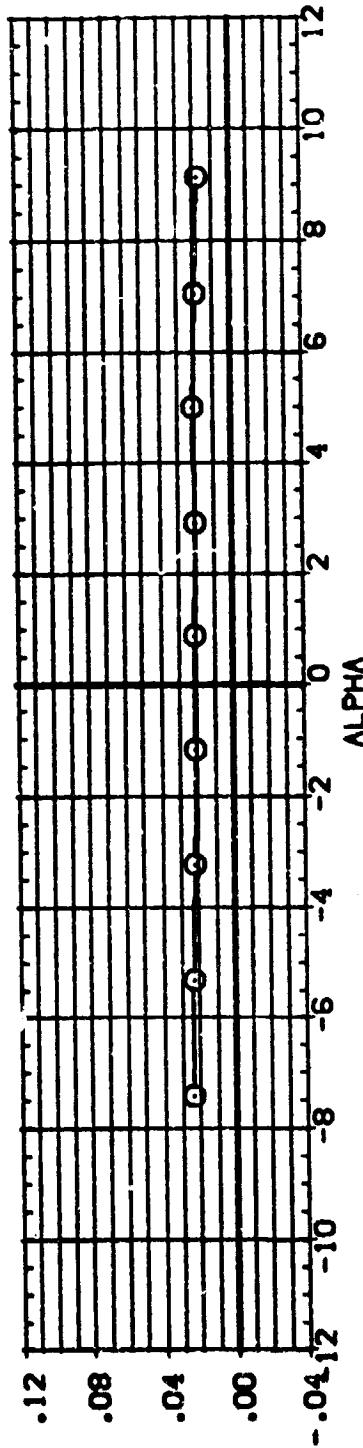
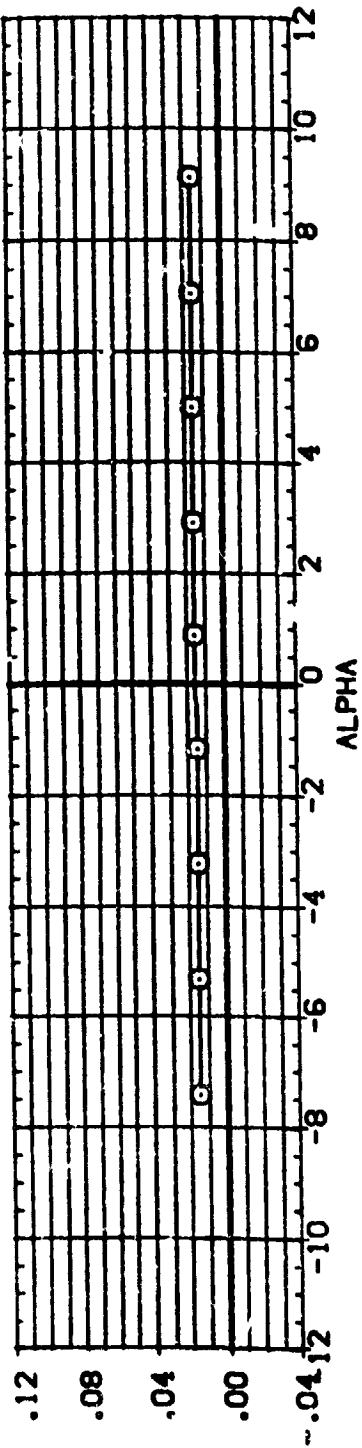
DATA SET SYMBOL (B88009) (B88007)

CONFIGURATION DESCRIPTION
 MSC 579(1A37) (034)(114)(S12)(US)
 DATA NOT AVAILABLE

BETA 0.000 0.000

ORIGIN 0.000 0.000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

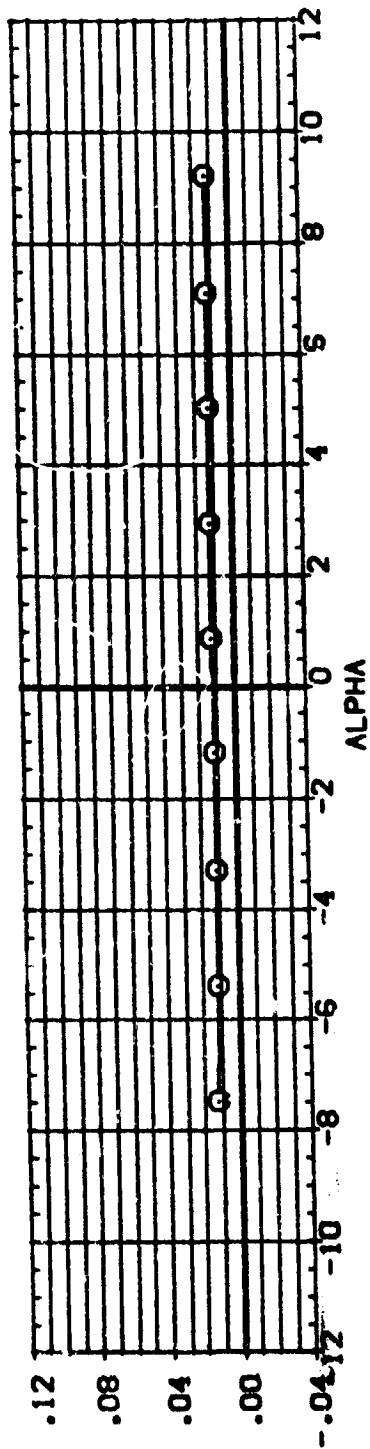
(1)MACH = 2.99

DATA SET SYMBOL (886007) ☐ CONFIGURATION DESCRIPTION MSC 579(1A37) (0341)(114)(S12)(U6) DATA NOT AVAILABLE

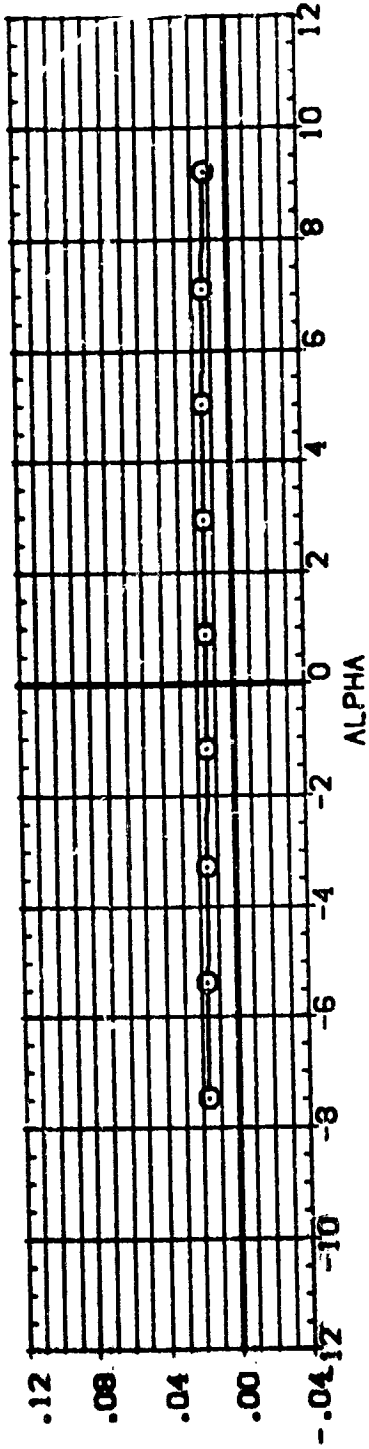
BETA 0.000 0.000 0.000 0.000

REFERENCE INFORMATION
SREF 6.1980 IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XREF 2.7200 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .0040

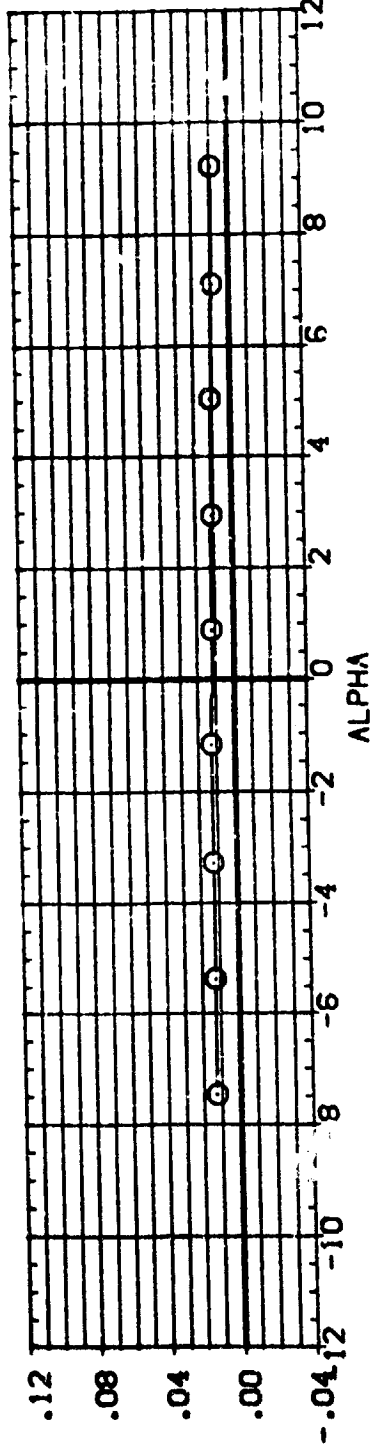
CAB0



CAB1



CAB5



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(J)MACH = 3.48

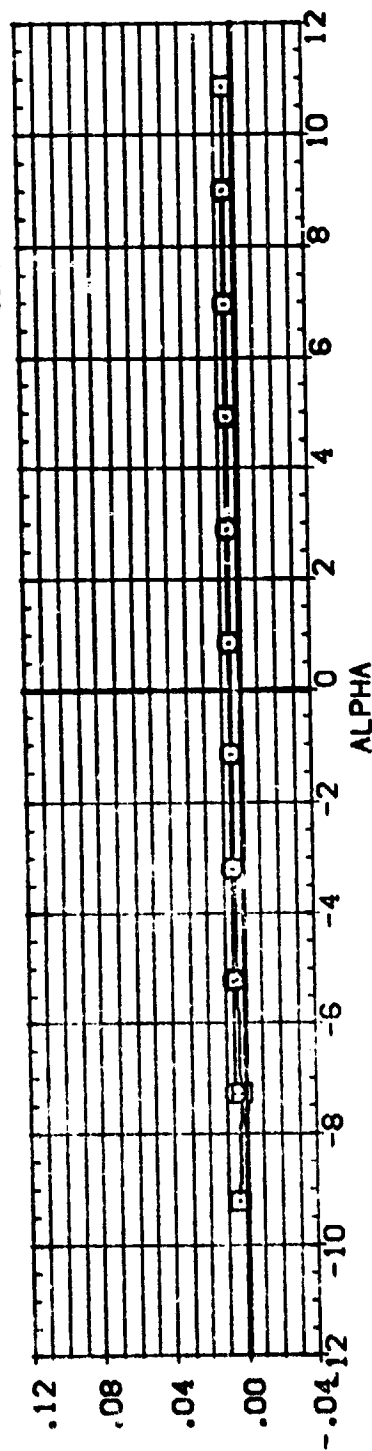


DATA SET SYMBOL CONFIGURATION DESCRIPTION
(888009) MSFC 579(1:37) (034)(1:4)(5:2)(US)
(888007) MSFC 579(1:37) (034)(1:5)(5:2)

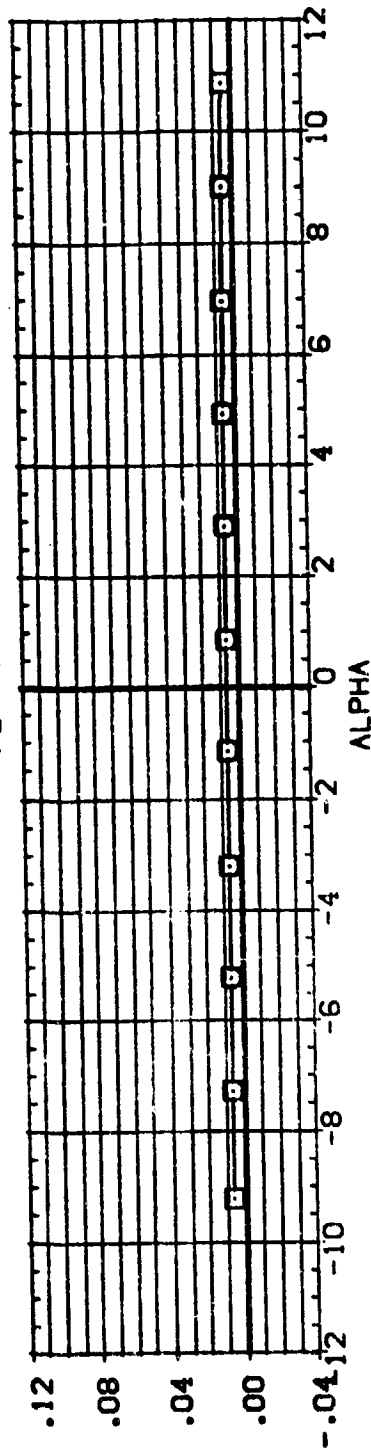
BETA DBBINC
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1980 SQ.IN.
LREF 5.1600 IN.
SREF 5.1600 IN.
XREF 2.7200 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .0010

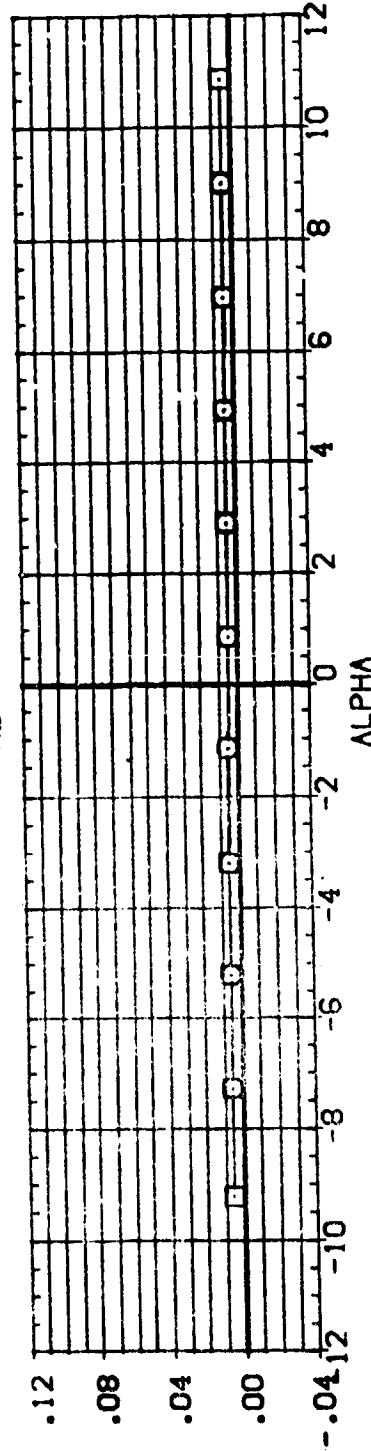
CABO



CABT



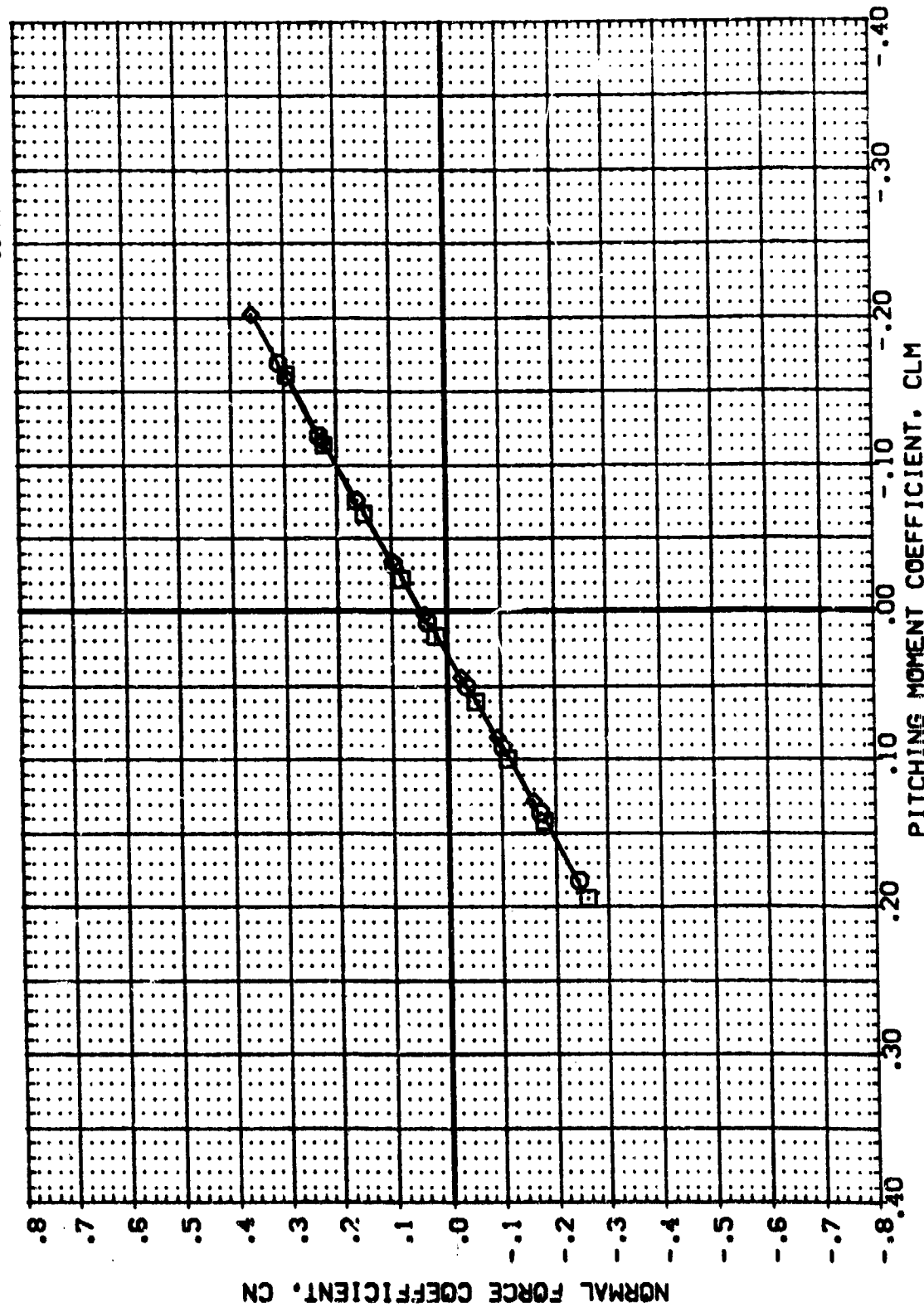
CABS



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(K)MACH = 4.96

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBITING	REFERENCE INFORMATION
(000005)	MSC 500(1A48) (034)(T9)(S12)	.000	.000	SREF 5.1980 50. IN.
(000004)	MSC 500(1A48) (034)(T14)(S12)	.000	.000	LREF 5.1600 IN.
(000001)	MSC 500(1A48) (034)(T14)(S12)(US)	.000	.000	BREF 5.1600 IN.
				XREF 2.7200 IN.
				YREF .0000 IN.
				ZREF .0000 IN.
				SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(B85005) H5C 580(IA48) (G34)(T9)(S12)

(B85004) H5C 580(IA48) (G34)(T14)(S12)

(B85001) H5C 580(IA48) (G34)(T14)(S12)(US)

BETA 0.000

0.000

0.000

REFERENCE INFORMATION

SREF 6.1980 50. IN.

LREF 5.1600 IN.

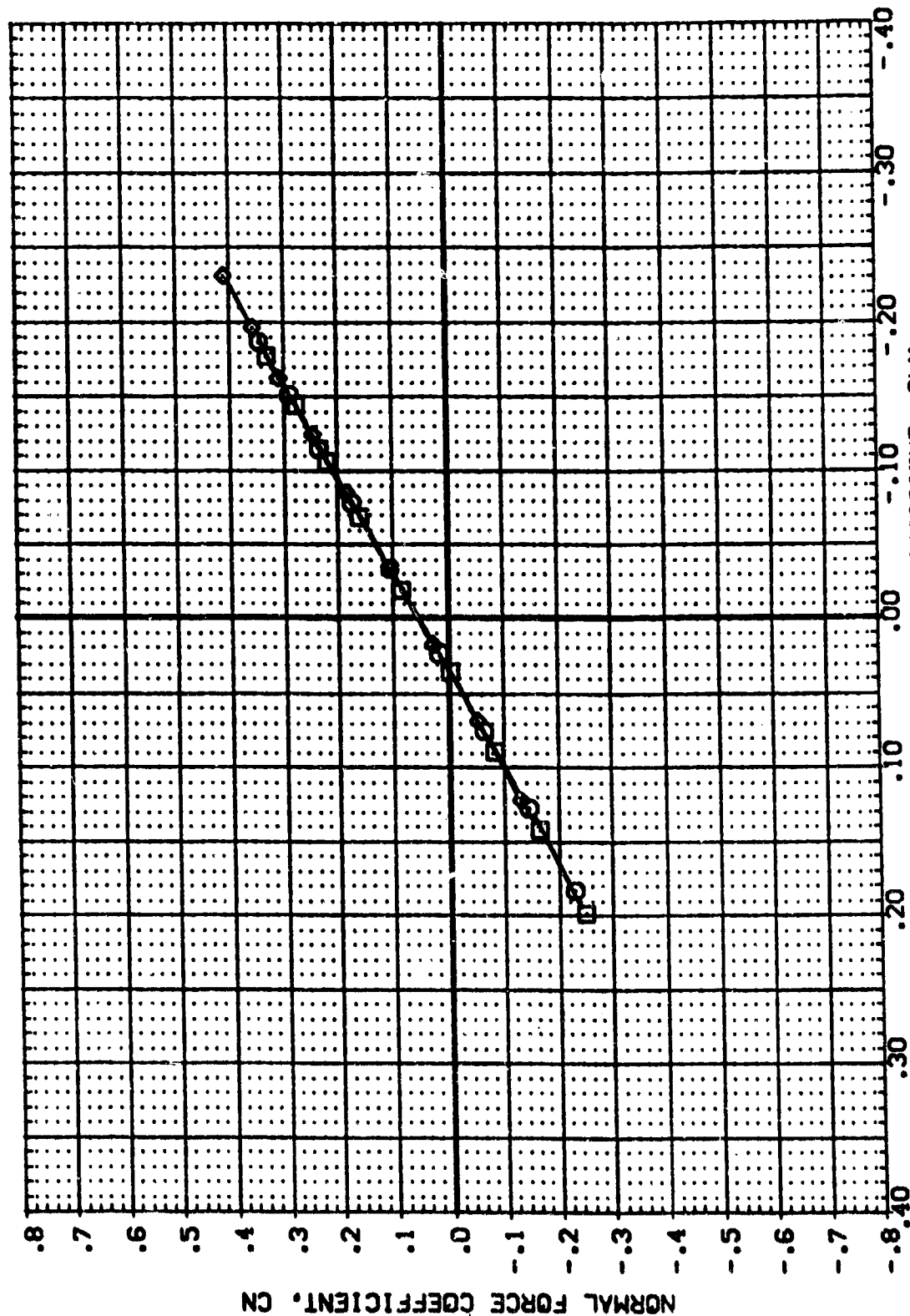
BREF 5.1600 IN.

XPRP 2.7200 IN.

YPRP .0000 IN.

ZPRP .0000 IN.

SCALE .0010



PITCHING MOMENT COEFFICIENT, CLM

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

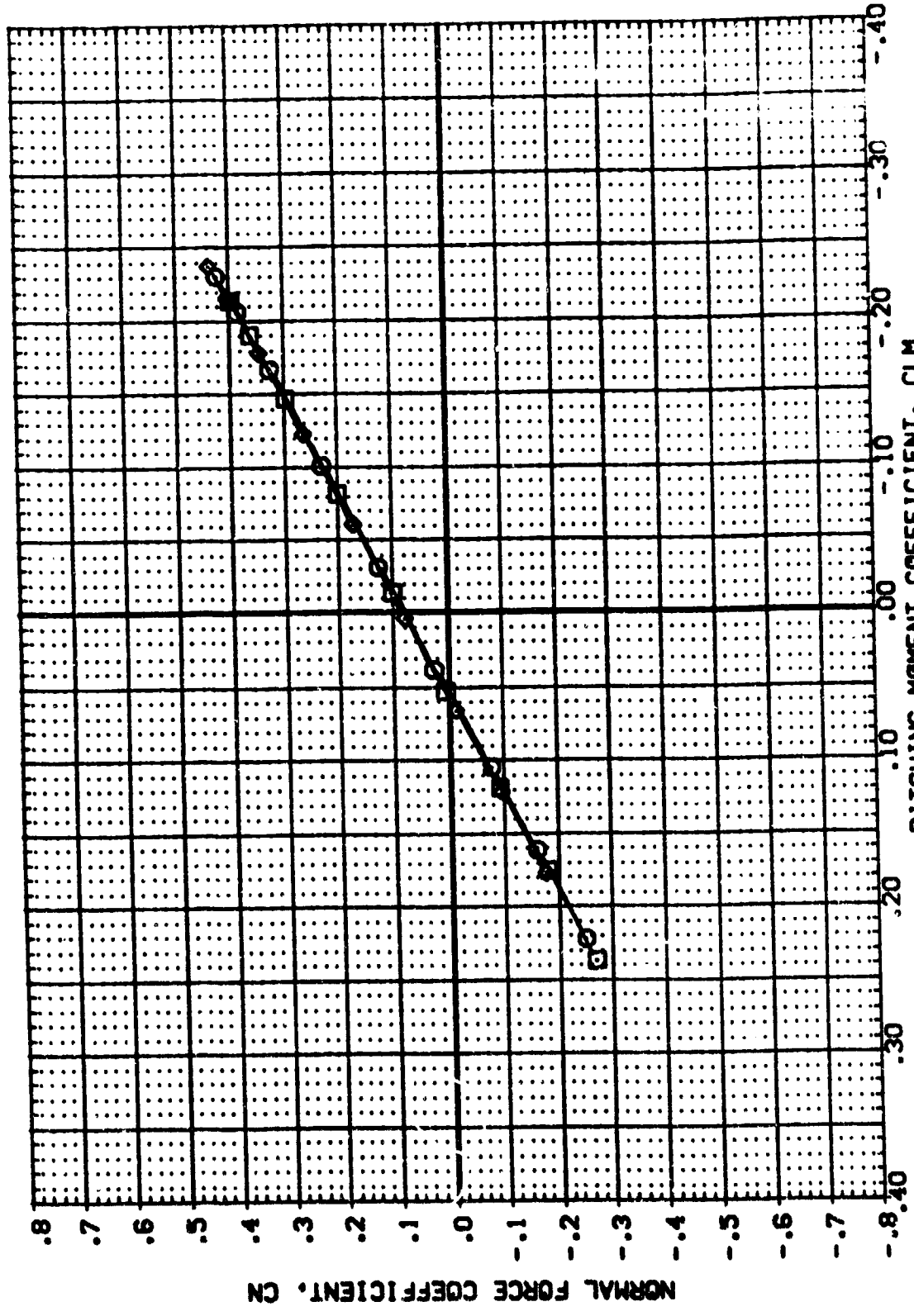
(B)MACH = .90

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DATA SET SYMBOL: (B85005) (B85004) (B85001)
 CONFIGURATION DESCRIPTION: MSFC 580(1A48) (034)(114)(S12) MSFC 580(1A48) (034)(114)(S12)(US) MSFC 580(1A48) (034)(114)(S12)(US)

BETA: .000 .000 .000 .000 .000 .000

REFERENCE INFORMATION:
 SREF: 6.1960 SQ.IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XREF: 2.7200 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0040

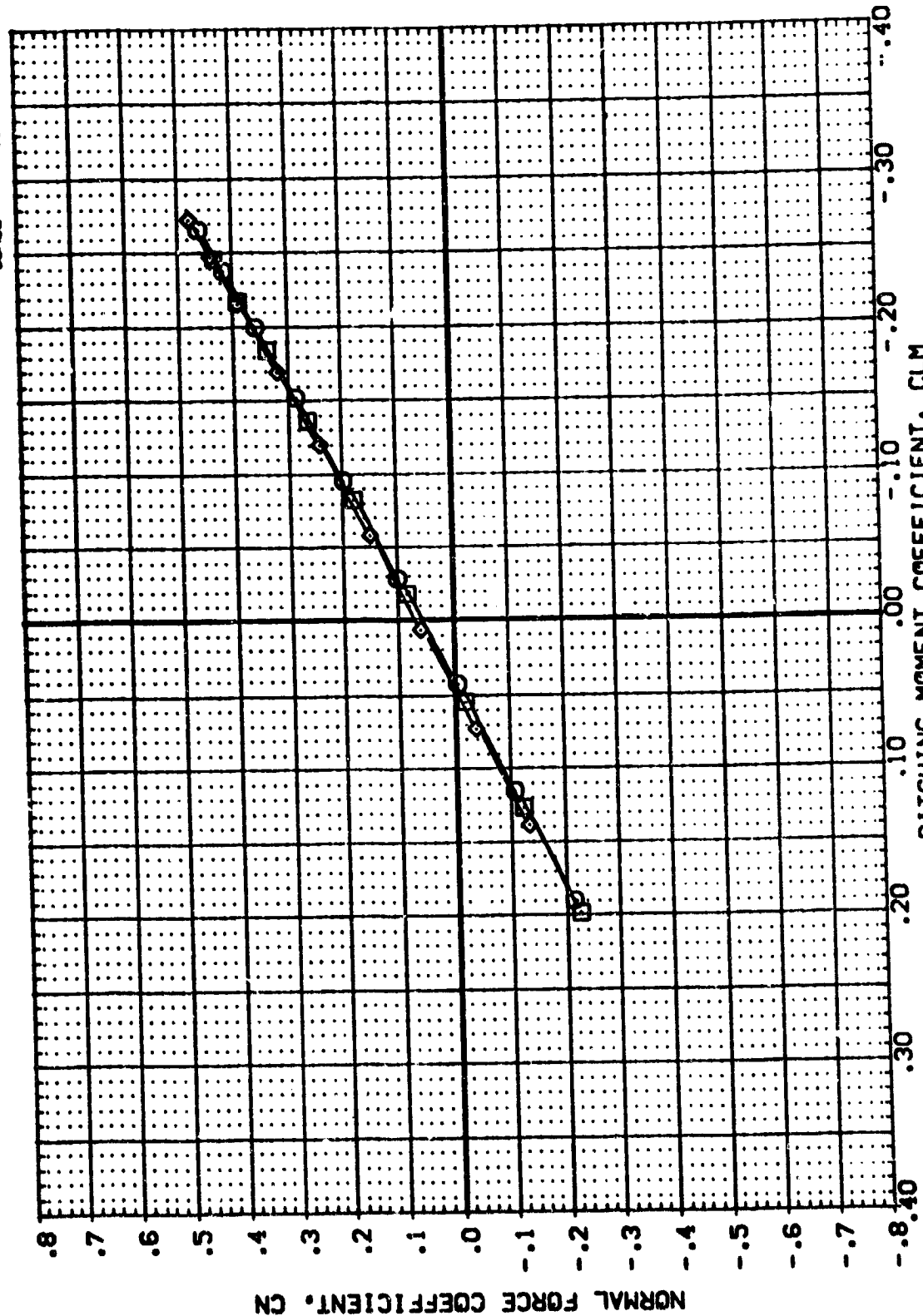


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(C)MACH = 1.10



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBITING	REFERENCE INFORMATION
(885005)	MSFC 5801(A48) (034)(T9)(S12)	.000	.000	SPCF 6.1800 IN.
(885004)	MSFC 5801(A48) (034)(T14)(S12)	.000	.000	LETF 5.1800 IN.
(885001)	MSFC 5801(A48) (034)(T14)(S12)(U6)	.000	.000	SPCF 5.1800 IN.
				XREF 2.7200 IN.
				YREF .0000 IN.
				ZREF .0000 IN.
				SCALE .0040



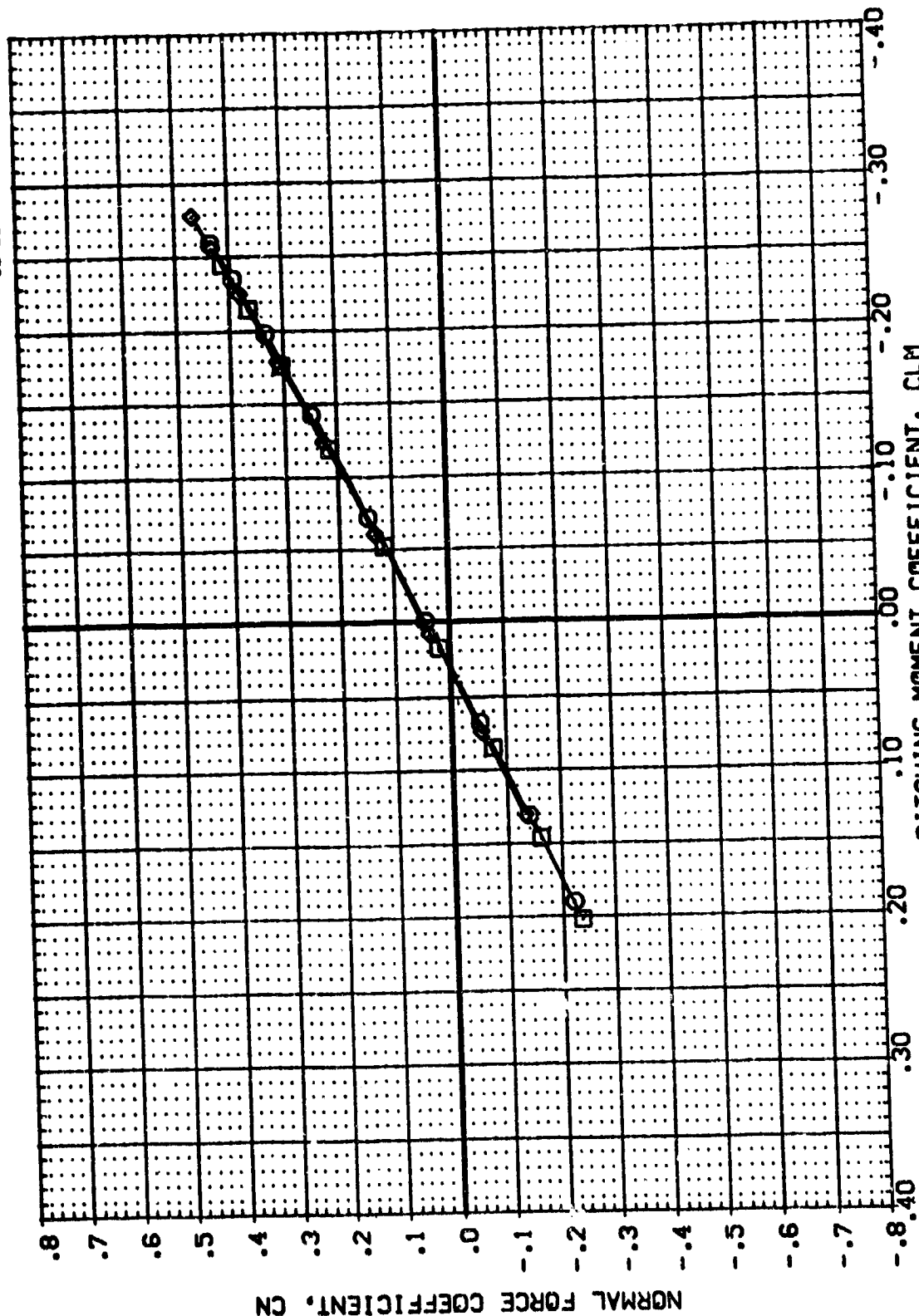
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(D)MACH = 1.25

REFERENCE INFORMATION
 REF 8.1980 50. IN.
 LREF 5.1600 IN.
 MREF 5.1600 IN.
 YREF 2.7200 IN.
 ZREF .0000 IN.
 SCALE .0010

BETA 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888005) H5FC 580(1A48) (034)(119)(S12)
 (888004) H5FC 580(1A48) (034)(114)(S12)
 (888001) H5FC 580(1A48) (034)(114)(S12)(L6)



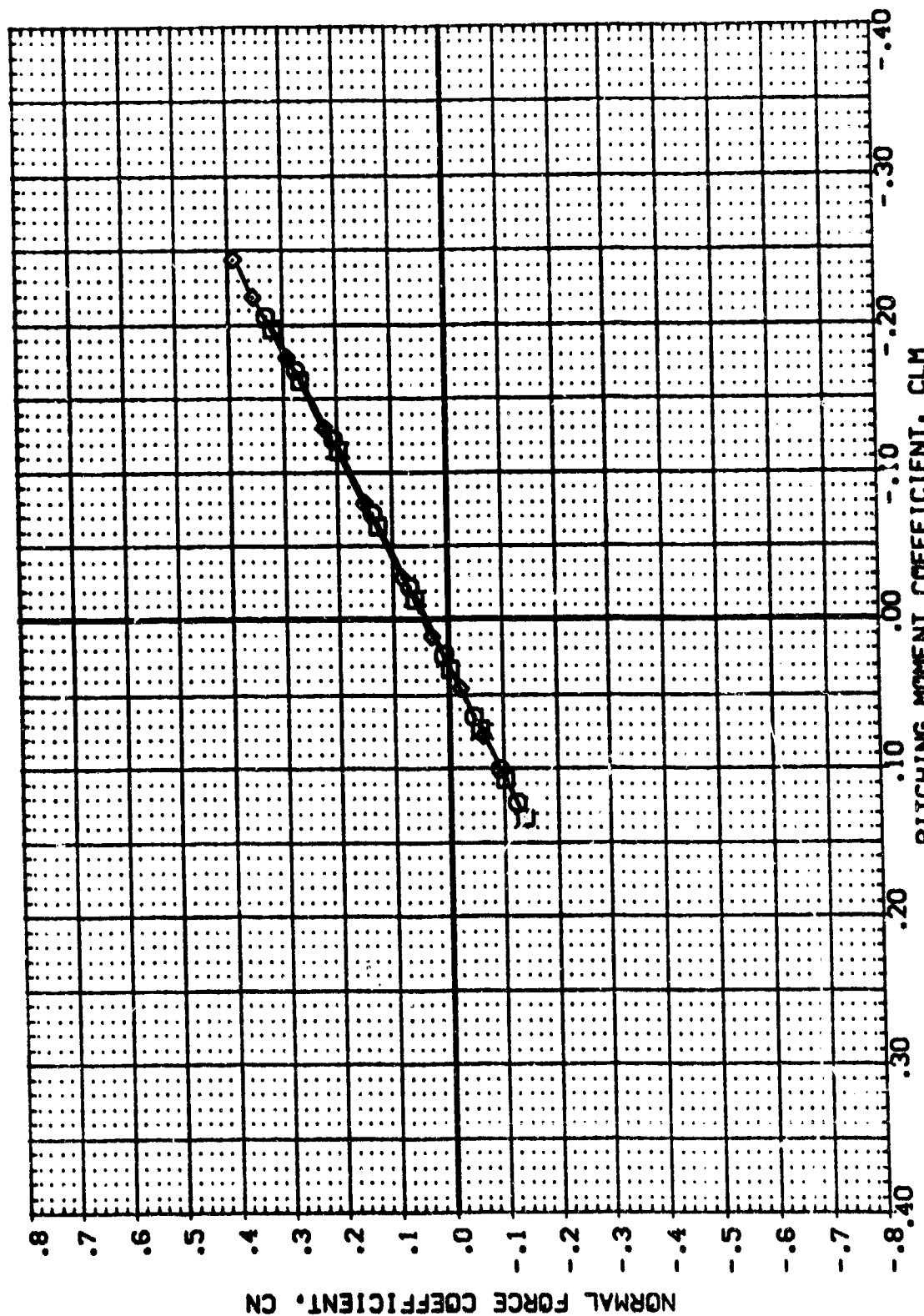
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(E)MACH = 1.46

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

BETA ORIGIN
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURAT (O) DESCRIPTION
 (B89005) MSC 580 (A48) (034) (T9) (S12)
 (B89004) MSC 580 (A48) (034) (T14) (S12)
 (B89001) MSC 580 (A48) (034) (T14) (S12) (US)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(F)MACH = 1.97

DATA SET SYMBOL CONFIGURATION DESCRIPTION

[000005] HSEC 5801(A48) (C34)(T9)(S12)

[000004] HSEC 5801(A48) (C34)(T14)(S12)

[000001] HSEC 5801(A48) (C34)(T14)(S12)(US)

BETA ORBINC

.000 .000

.000 .000

.000 .000

REFERENCE INFORMATION

WREF 6.1800 50. IN.

LREF 5.1800 IN.

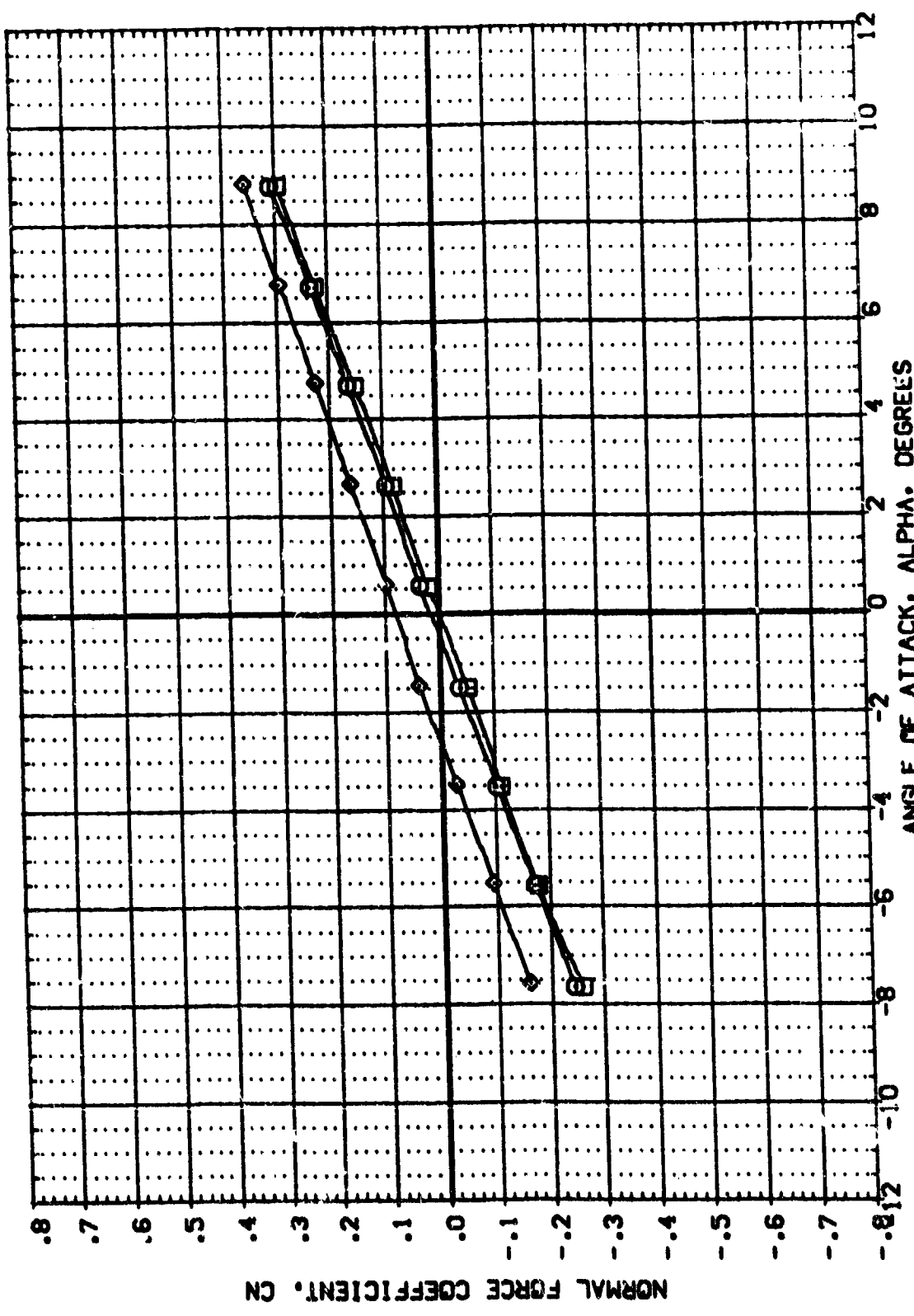
BREF 5.1800 IN.

XREF 2.7200 IN.

YREF .0000 IN.

ZREF .0000 IN.

SCALE .0040

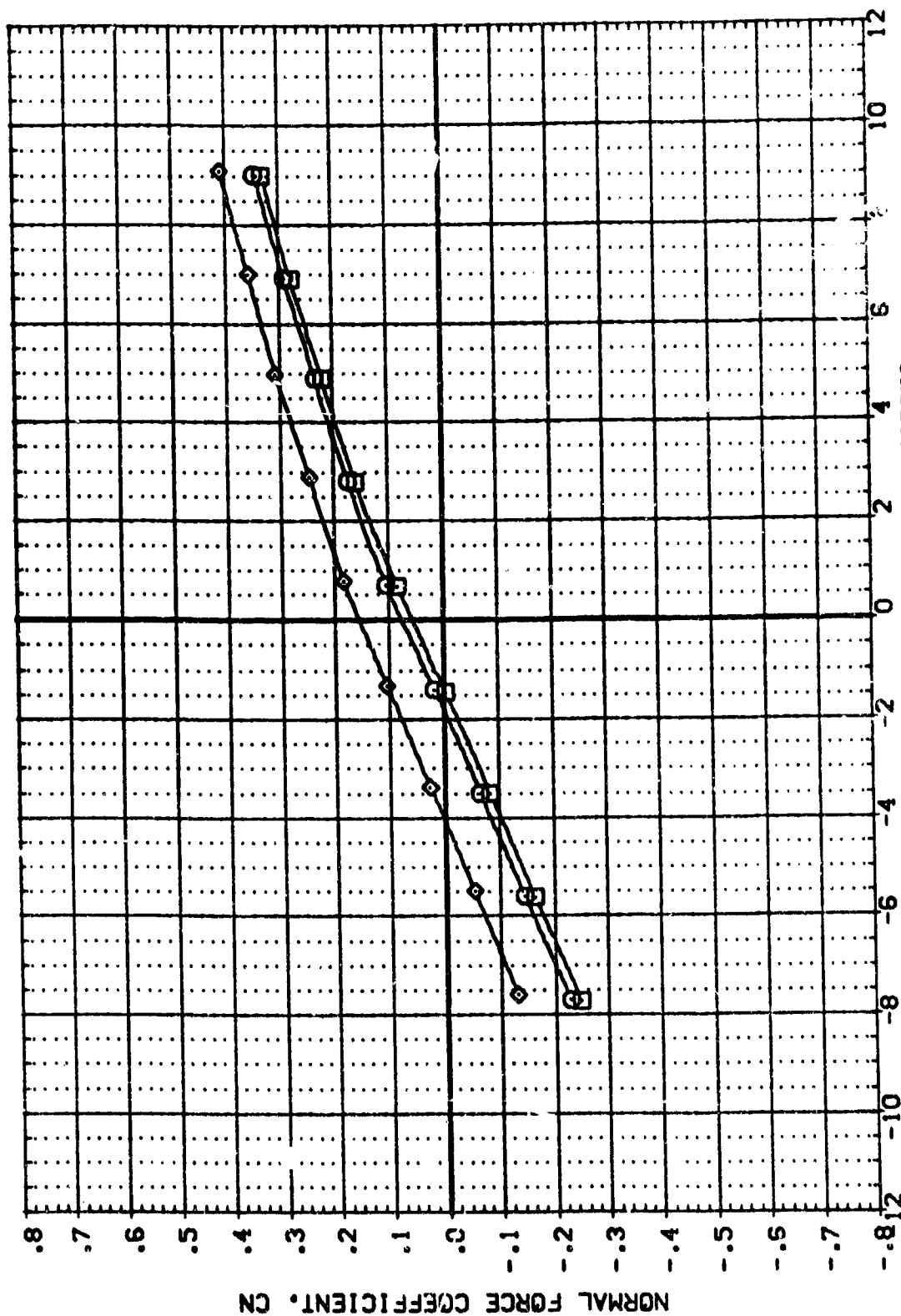


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) MSFC 580(1A48) (034)(T9)(S12)
 (B89004) MSFC 580(1A48) (034)(T14)(S12)
 (B89001) MSFC 580(1A48) (034)(T14)(S12)(US)

BETA ORBITING
 .000
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1600 IN.
 XREF 5.1600 IN.
 YREF 2.7200 IN.
 ZREF .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACTERISTICS (ORBITER ONLY)

(B)MACH = .90

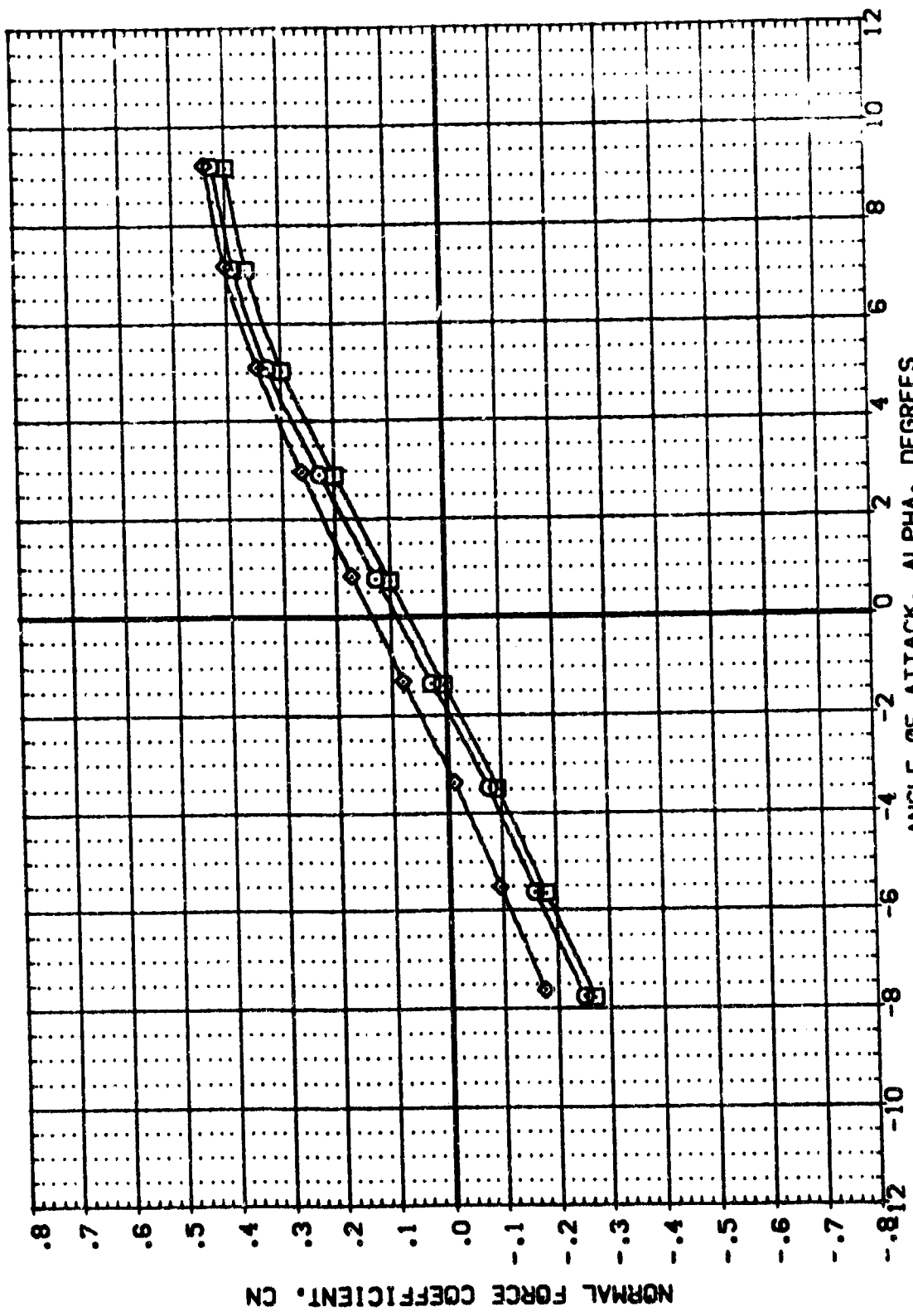
DATA SET SYMBOL: (889005) (889004) (889001)

CONFIGURATION DESCRIPTION: MSFC 5801(A48) (034)(T9)(S12) MSFC 5801(A48) (034)(T14)(S12) MSFC 5801(A48) (034)(T14)(S12)(US)

BETA: .000 .000 .000

ORBITAL: .000 .000 .000

REFERENCE INFORMATION: SREF 6.1980 IN. LREF 5.1600 IN. BREF 5.1600 IN. XPRP 2.7200 IN. YPRP .0000 IN. ZPRP .0000 IN. SCALE .0010



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(C)MACH = 1.10

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DATA SET SYMB. CONFIGURATION DESCRIPTION

(B89005) MSFC 880((A48)) (034)((T9)) (S12)

(B89004) MSFC 880((A48)) (034)((T14)) (S12)

(B89001) MSFC 880((A48)) (034)((T14)) (S12) (U6)

BETA ORBINC

.000 .000

.000 .000

.000 .000

REFERENCE INFORMATION

SREF 6.1980 SQ.IN.

LREF 5.1600 IN.

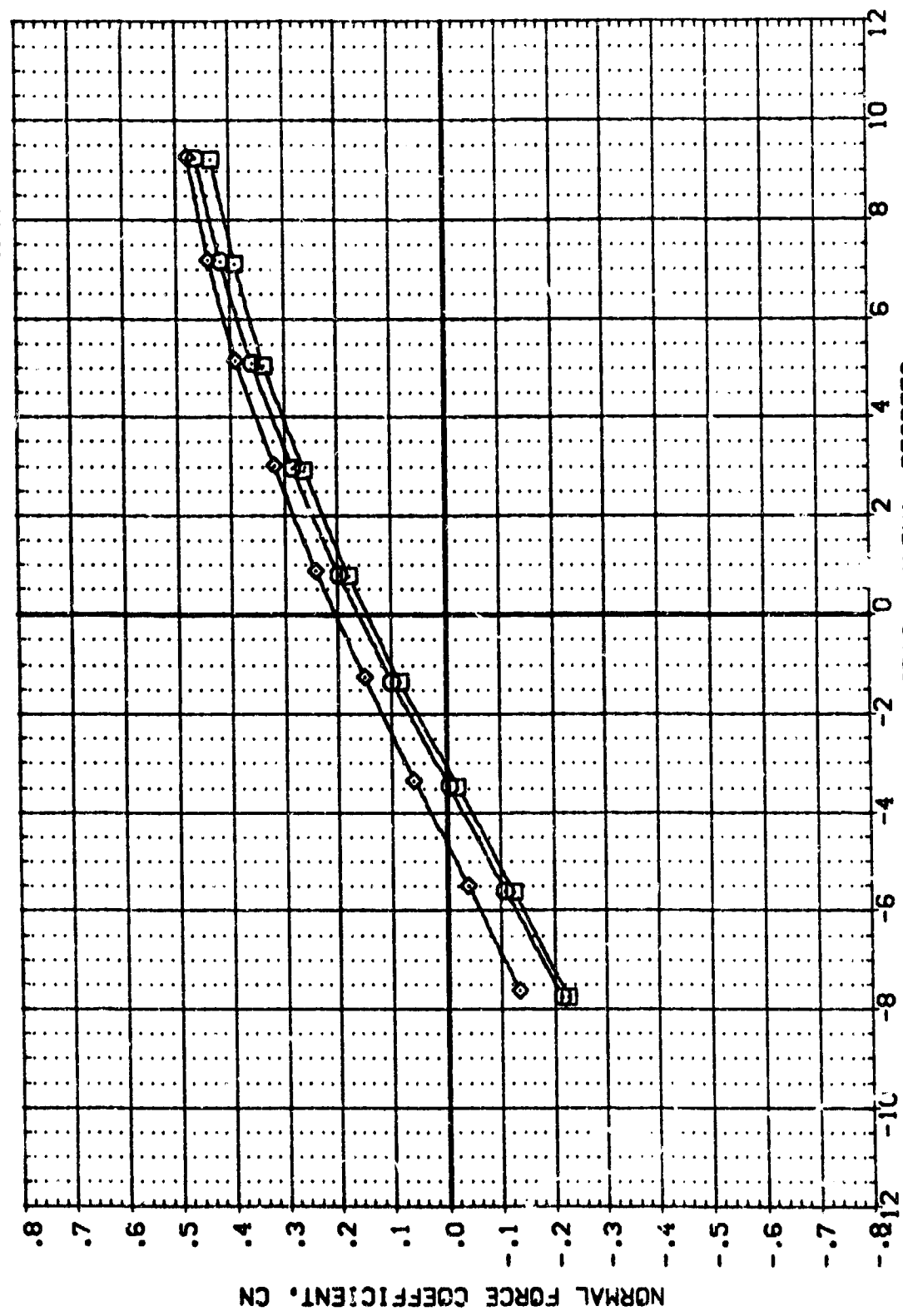
BREF 5.1600 IN.

XPRP 2.7200 IN.

YPRP .0000 IN.

ZPRP .0000 IN.

SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(D)MACH = .25

PAGE 65

REFERENCE INFORMATION

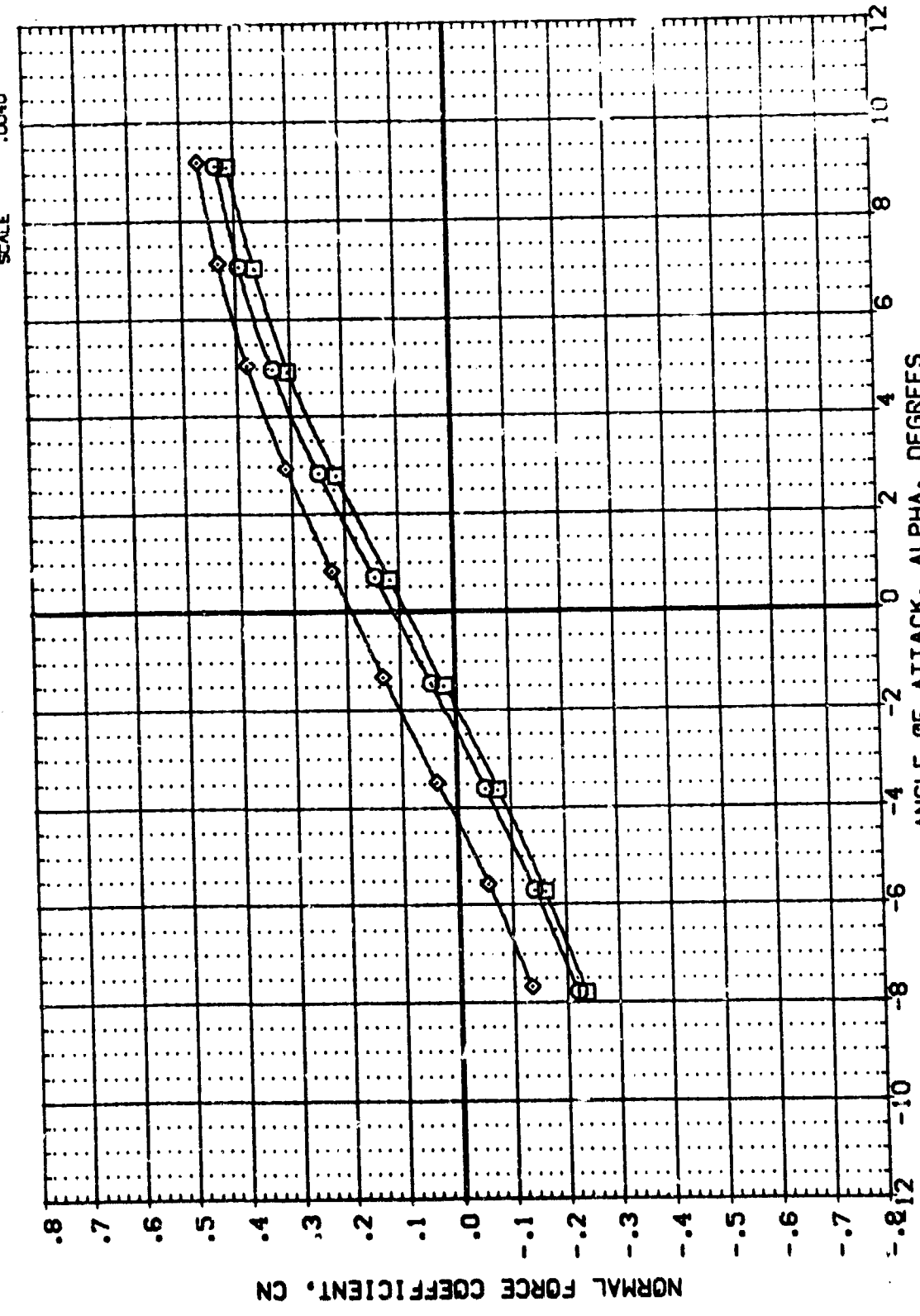
SREF	6.1980	50. IN.
UREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.7200	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

BETA ORIGIN

BETA	.000
ORIGIN	.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(1885005)	MSFC 580(1A48)	(034)(T9)(S12)
(1885004)	MSFC 580(1A48)	(034)(T14)(S12)
(1885001)	MSFC 580(1A48)	(034)(T14)(S12)(U6)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

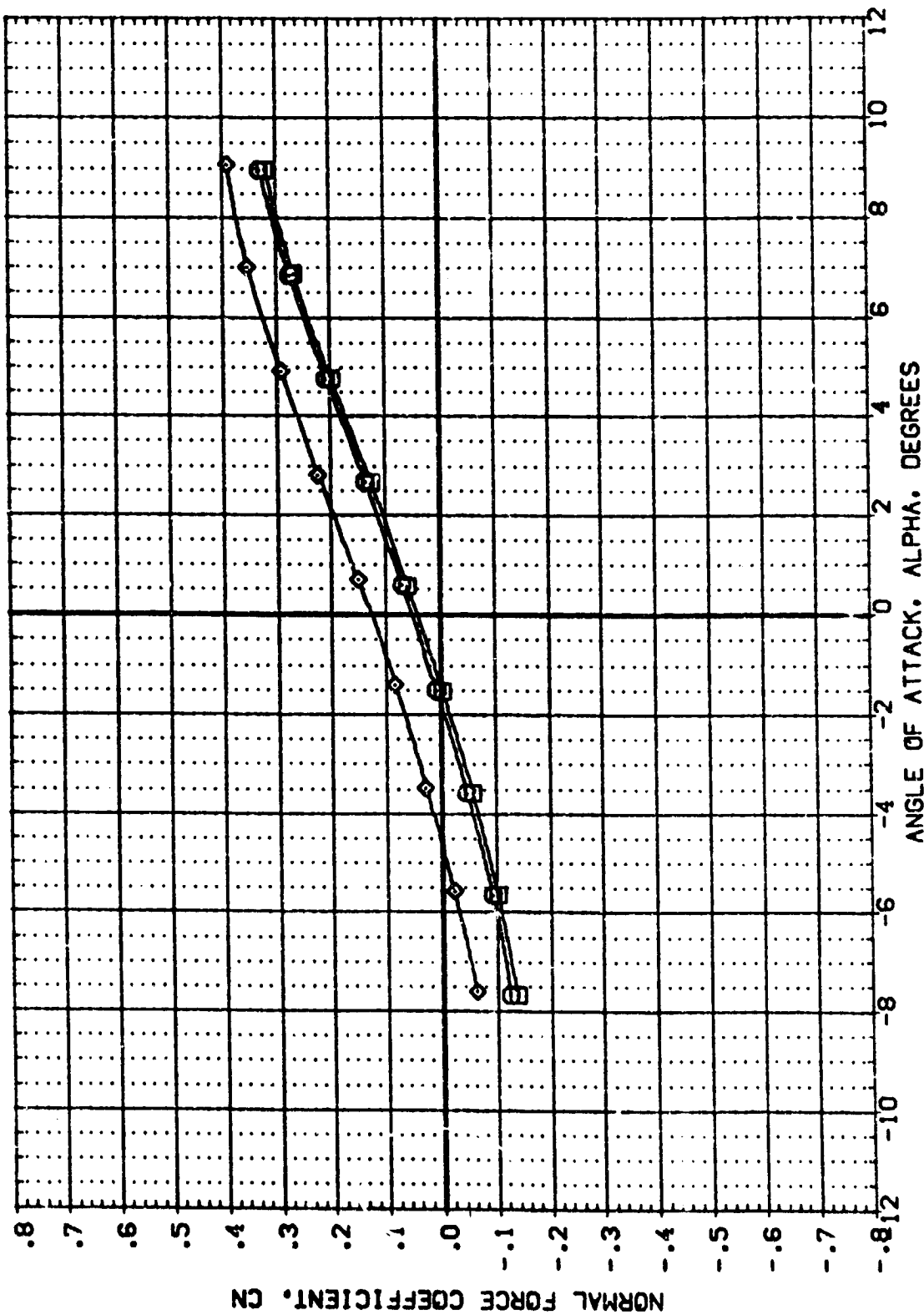
(E)MACH = 1.46

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DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (889005) MSFC 580(1A48) (034)(19)(S12)
 (889004) MSFC 580(1A48) (034)(114)(S12)
 (889001) MSFC 580(1A48) (034)(114)(S12)(US)

BETA ORBITING
 .000 .000
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



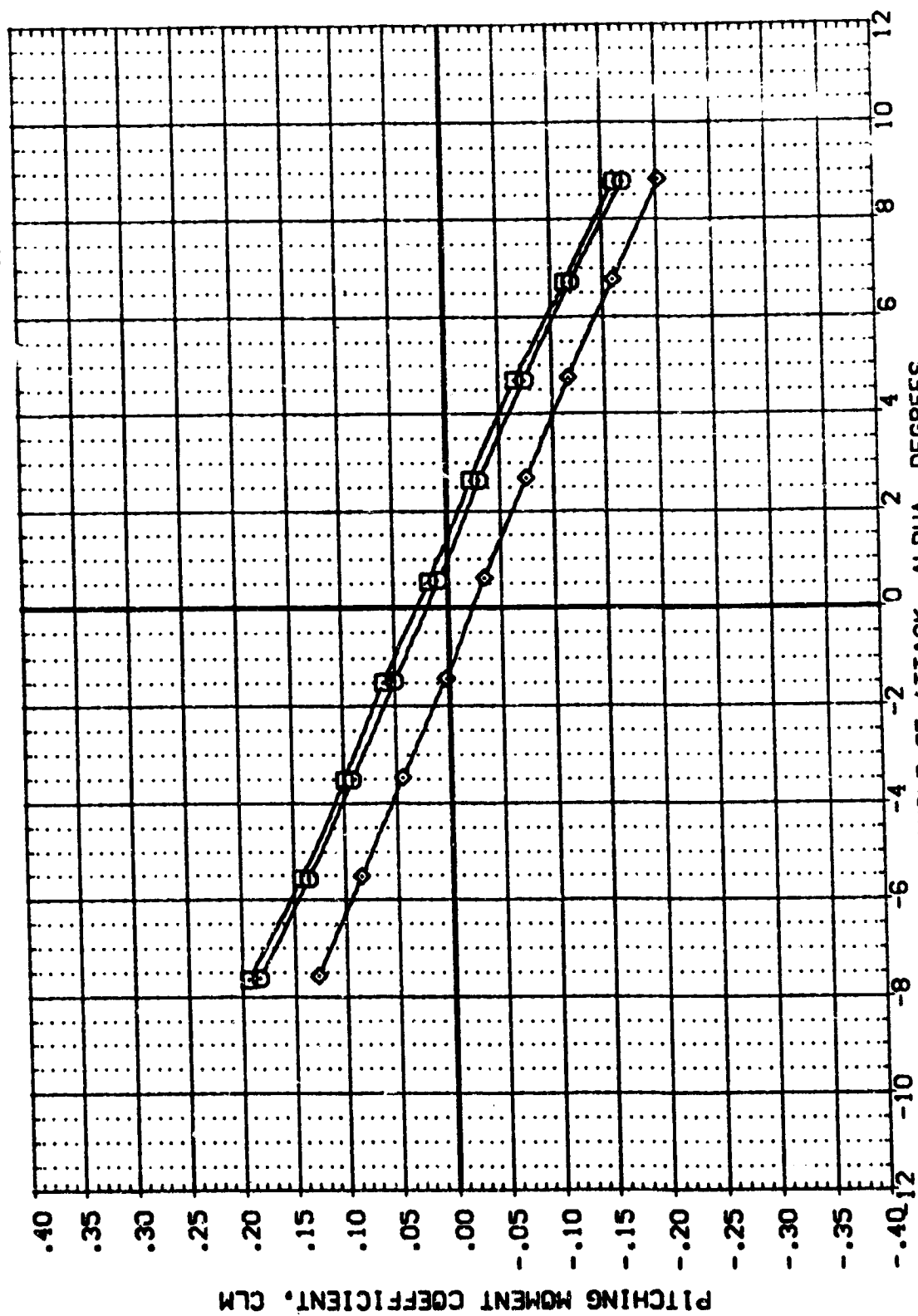
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(F)MACH = 1.97

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

BETA 0.000
 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B85005) HSC 580 (A48) (034) (T1) (S12)
 (B85004) HSC 580 (A48) (034) (T14) (S12) (US)
 (B85001) HSC 580 (A48) (034) (T14) (S12) (US)

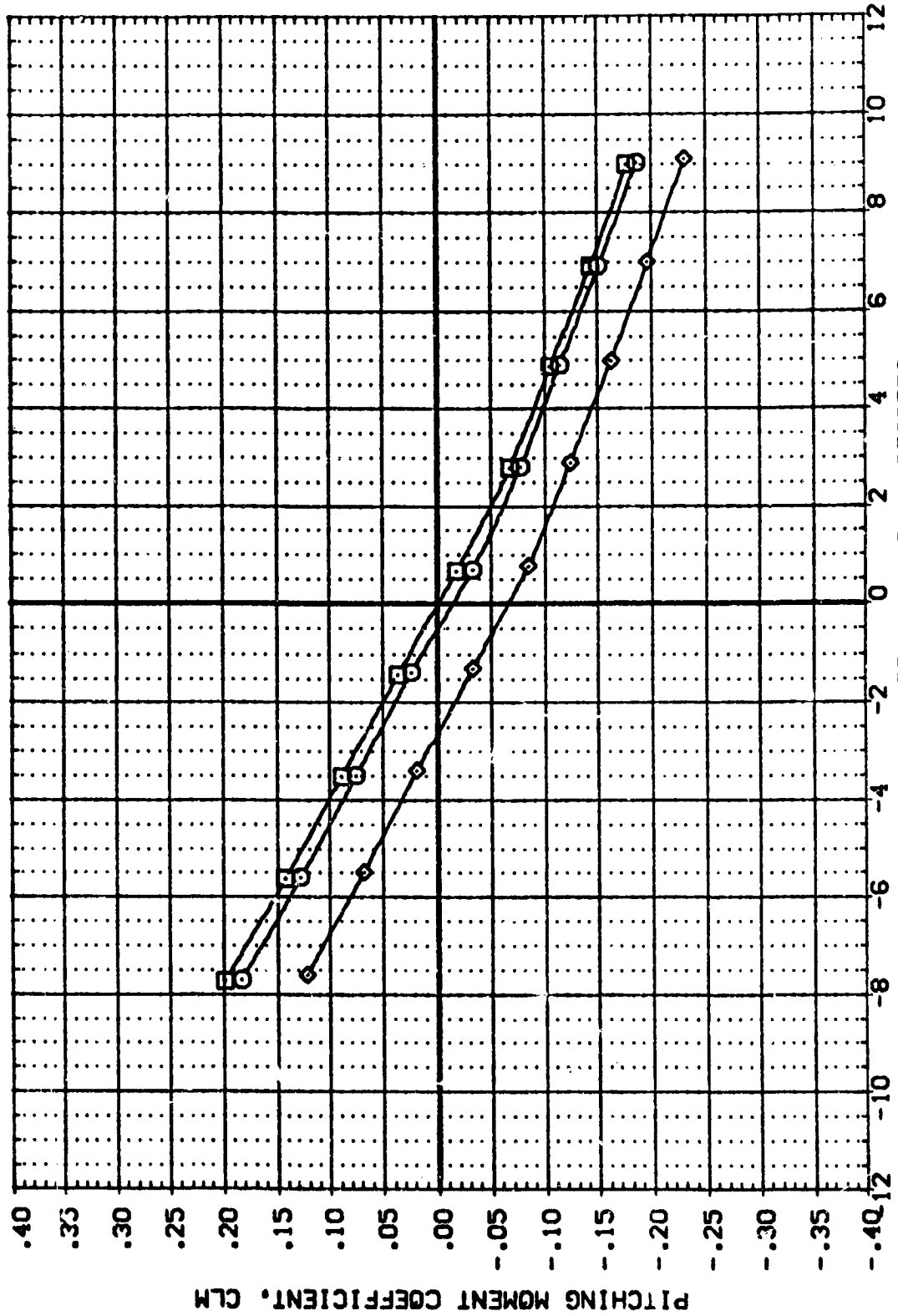


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B85005) MSFC 580(I48) (034)(T9)(S12)
 (B85004) MSFC 580(I48) (034)(T14)(S12)
 (B85001) MSFC 580(I48) (034)(T14)(S12)(U6)

BETA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 53. IN.
 LREF 5.1900 IN.
 BRUF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040



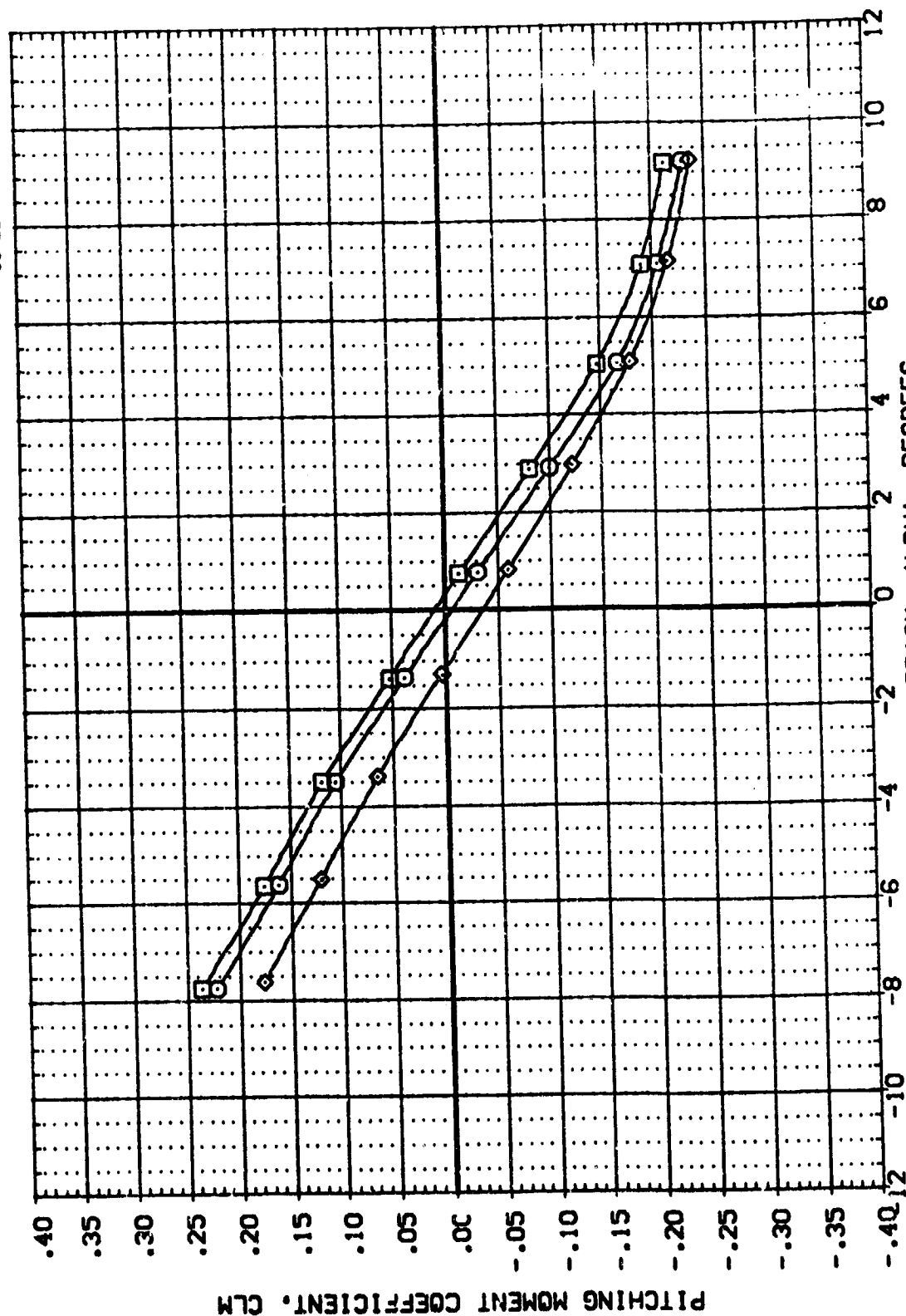
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(B)MACH = .90

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA .000
 ORIGIN .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (889005) HSC 580(1A48) (034)(T9)(S12)
 (889004) HSC 580(1A48) (034)(T14)(S12)
 (889001) HSC 580(1A48) (034)(T14)(S12)(U6)

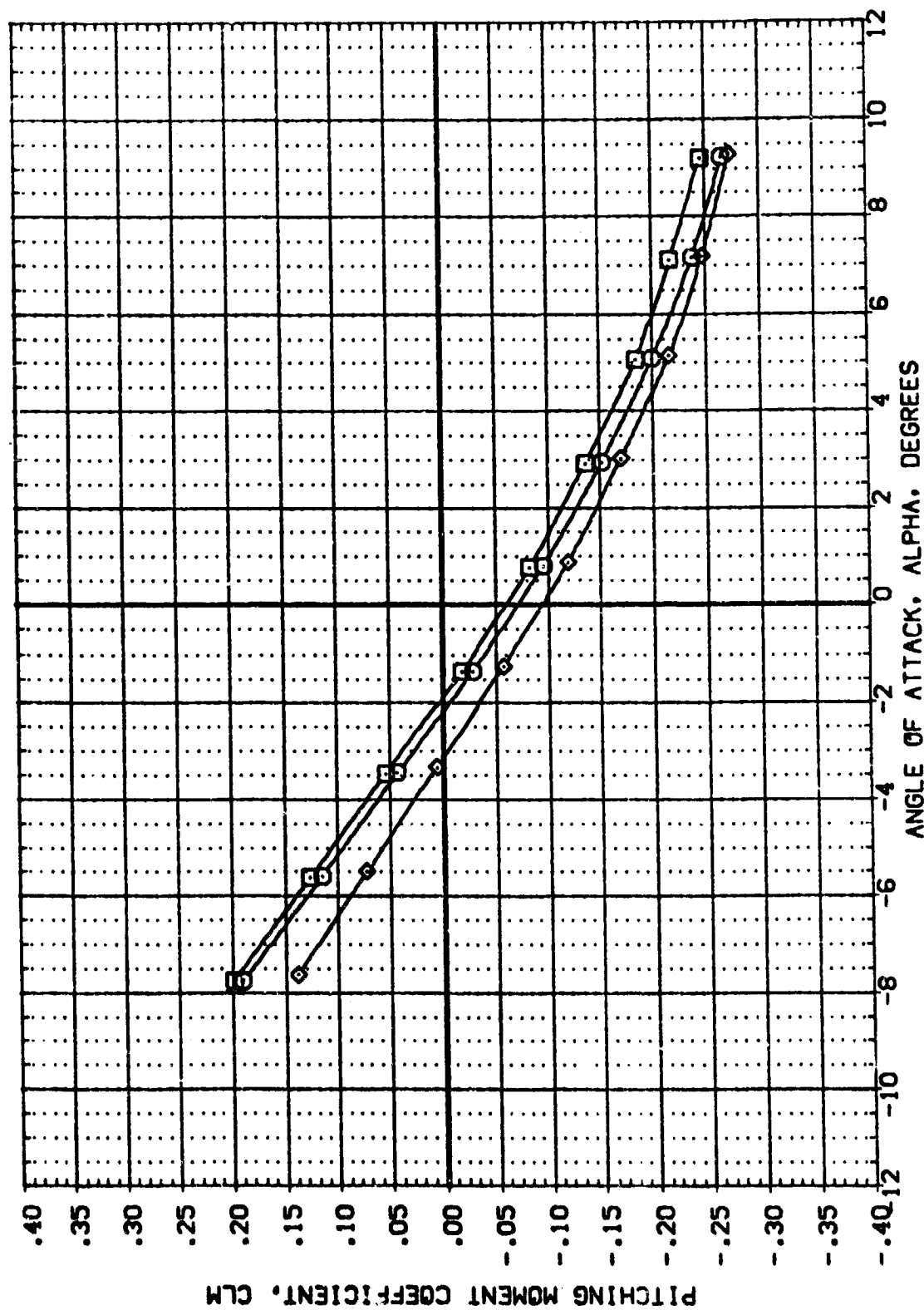


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(C)MACH = 1.10



DATA SET SYMBOL: (B39005) (B39004) (B39001)
CONFIGURATION DESCRIPTION: MSFC 580(A48) (034)(T9)(S12) MSFC 580(A48) (034)(T14)(S12) MSFC 580(A48) (034)(T14)(S12)(L6)
BETA: .000 .000 .000
ORBITAL: .000 .000 .000
REFERENCE INFORMATION: SREF 6.1980 SQ.IN. LREF 5.1600 IN. BREF 5.1600 IN. XMRP 2.7200 IN. YMRP .0000 IN. ZMRP .0000 IN. SCALE .0040



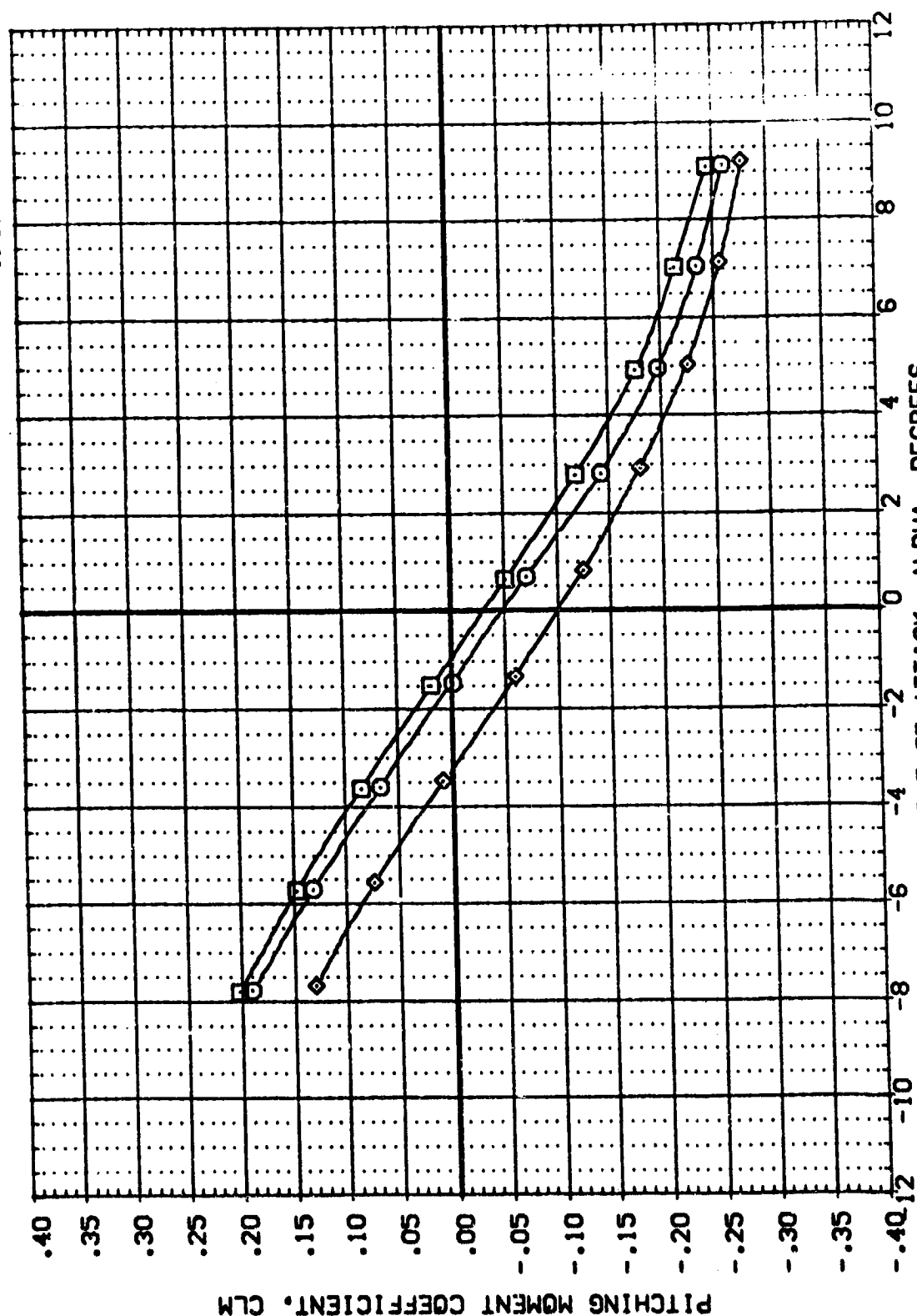
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(D)MACH = 1.25

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

BETA ORIGIN
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) MSFC 580(1A48) (034)(19)(S12)
 (B89004) MSFC 580(1A48) (034)(114)(S12)
 (B89001) MSFC 580(1A48) (034)(114)(S12)(US)



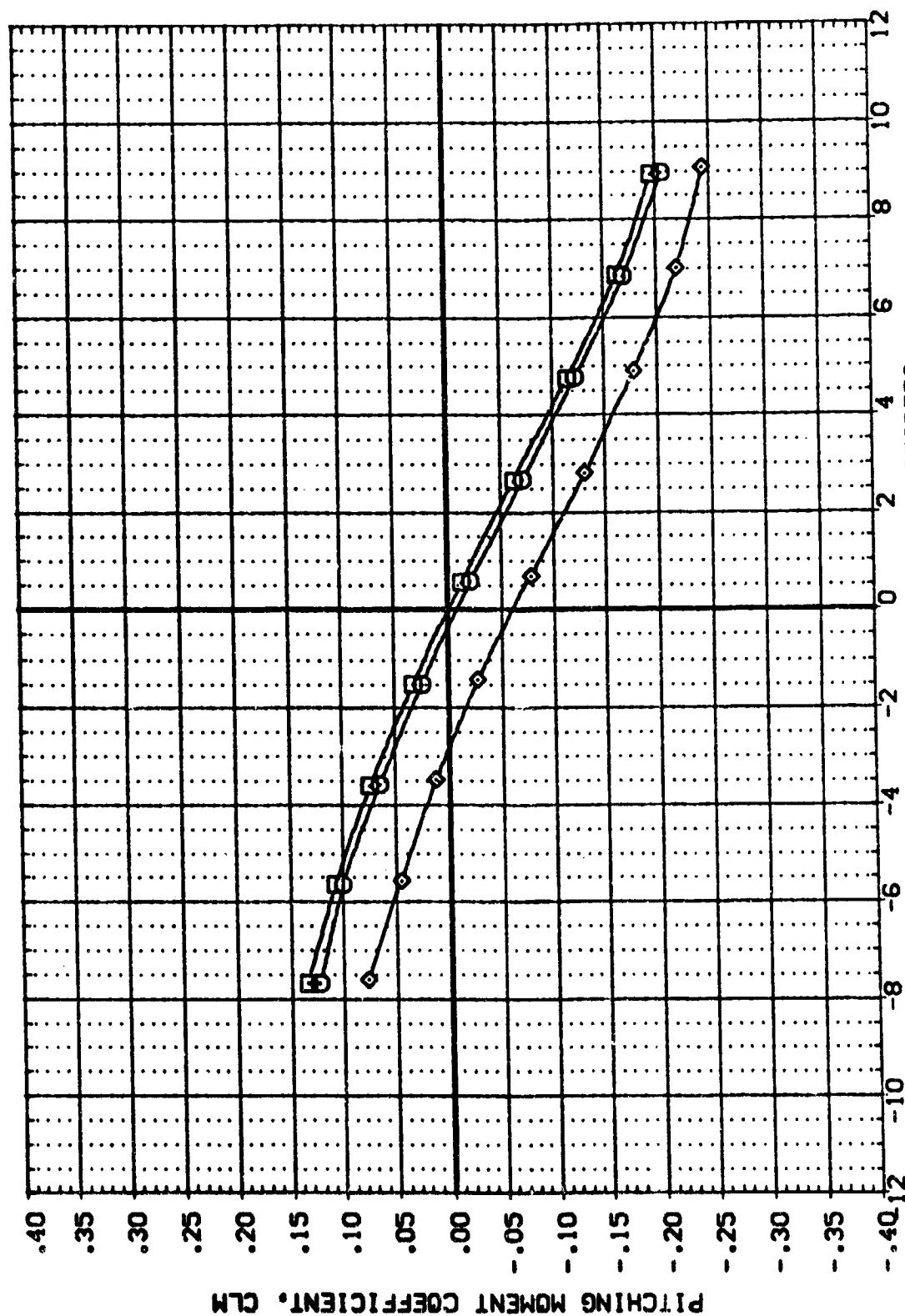
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(E)MACH = 1.46



DATA SET SYMBOL CONFIGURATION DESCRIPTION BETA ORBITING REFERENCE INFORMATION

(889005)	HSC 560(I48) (G34)(T9)(S12)	.000	.000	SREF 6.1980 50. IN.
(889004)	HSC 560(I48) (G34)(T14)(S12)	.000	.000	LREF 5.1600 IN.
(889001)	HSC 560(I48) (G34)(T14)(S12)(US)	.000	.000	BREF 5.1600 IN.
				XREF 2.7200 IN.
				YREF .0000 IN.
				ZREF .0000 IN.
				SCALE .0040



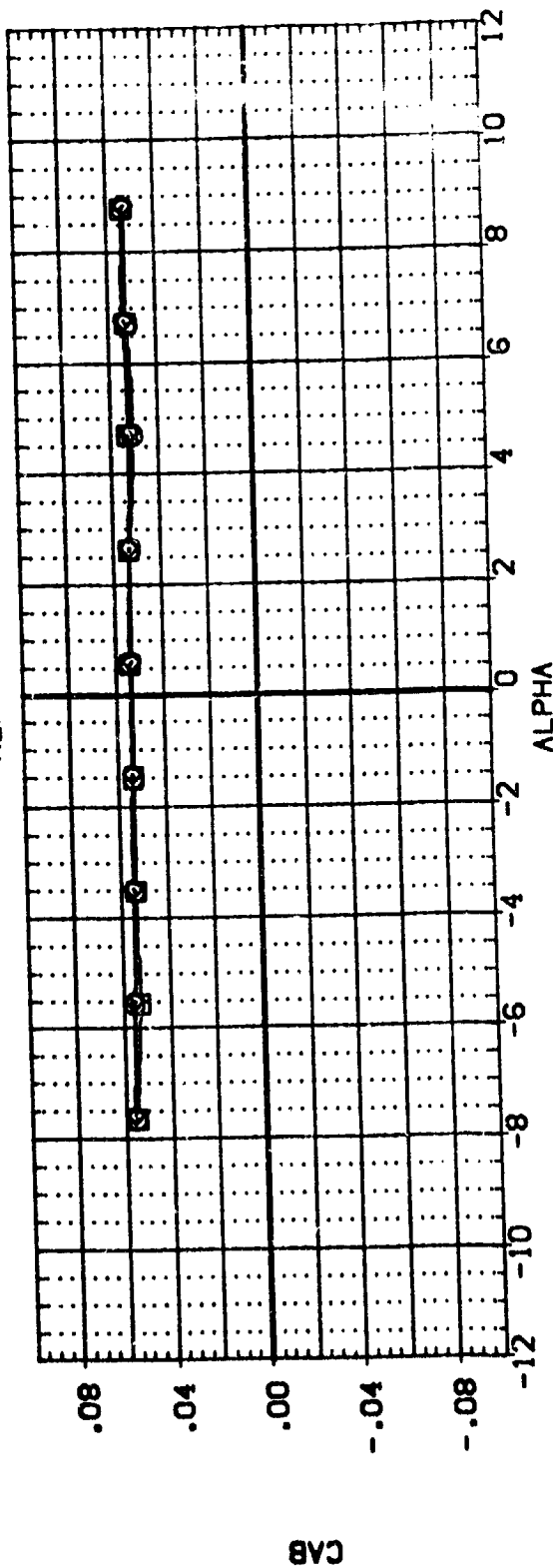
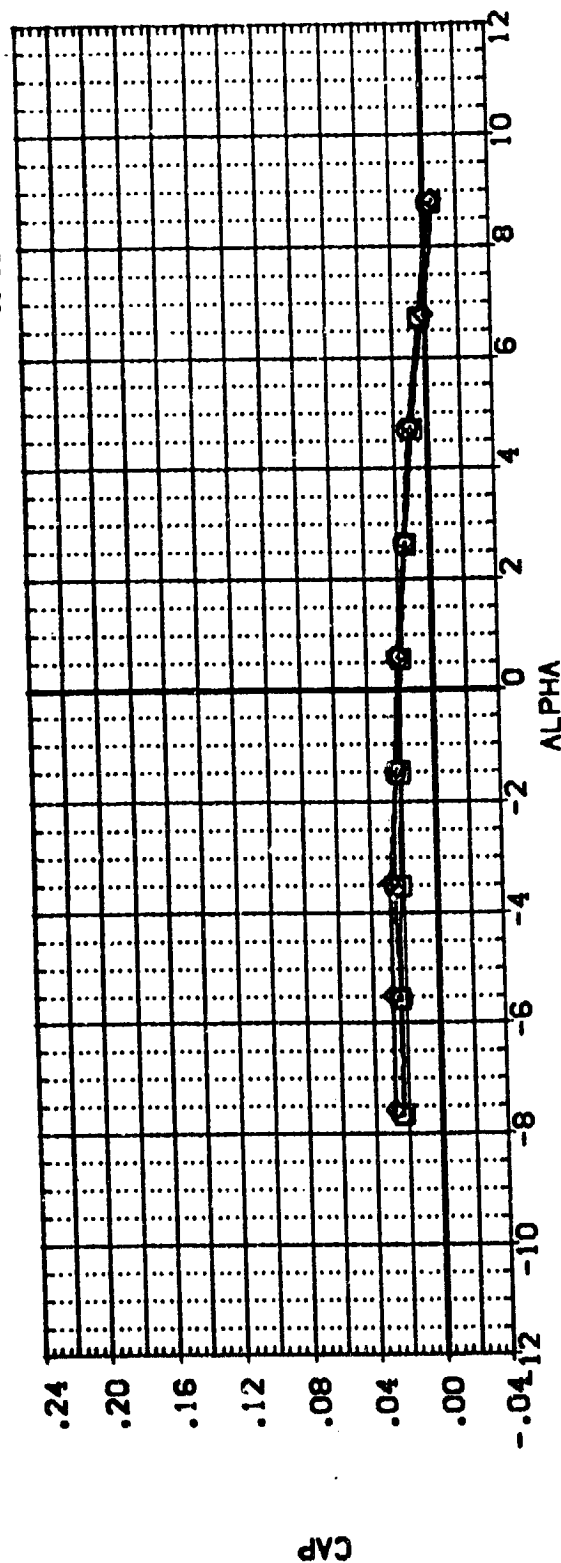
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(F)MACH = 1.97

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

BETA ORBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) NSFC 580(1A48) (034)(T9)(S12)
 (B89004) NSFC 580(1A48) (034)(T14)(S12)
 (B89001) NSFC 580(1A48) (034)(T14)(S12)(U6)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(A)MACH = .60

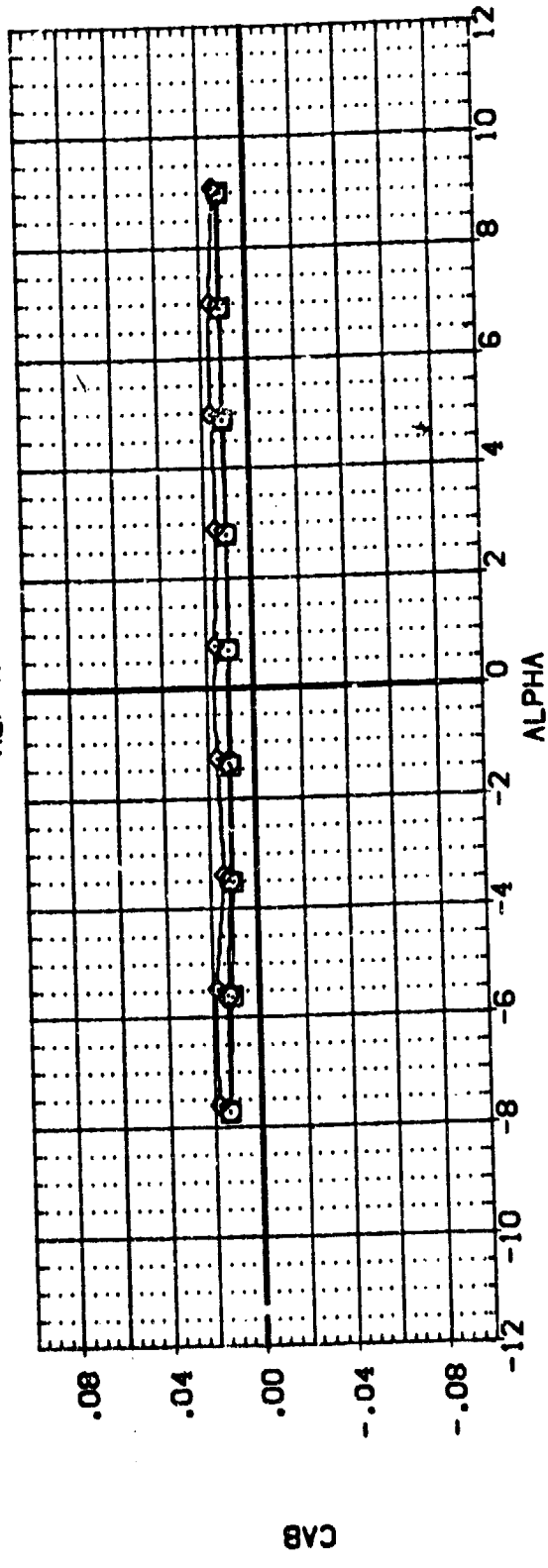
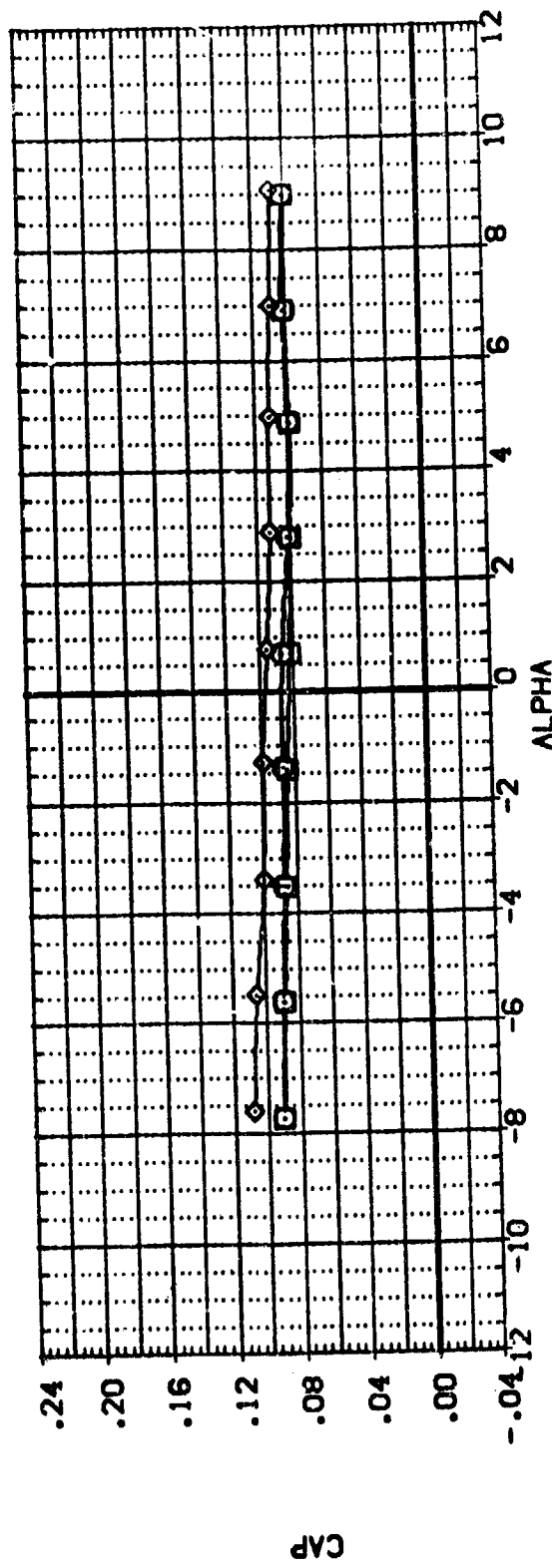


DATA SET SYMBOL (B89005)
(B89004)
(B89001)

CONFIGURATION DESCRIPTION
P5FC 590(I48) (C34)(T9)(S12)
P5FC 590(I48) (C34)(T14)(S12)
P5FC 590(I48) (C34)(T14)(S12)(U6)

BETA ORBITING
.000
.000
.000

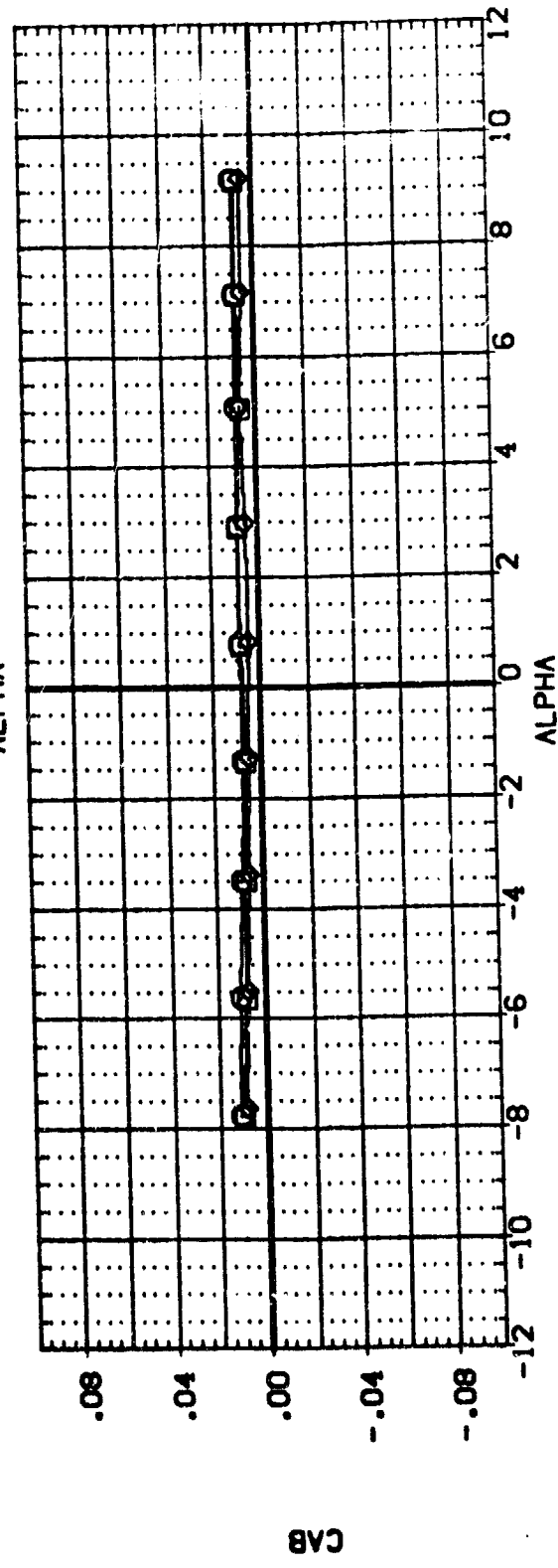
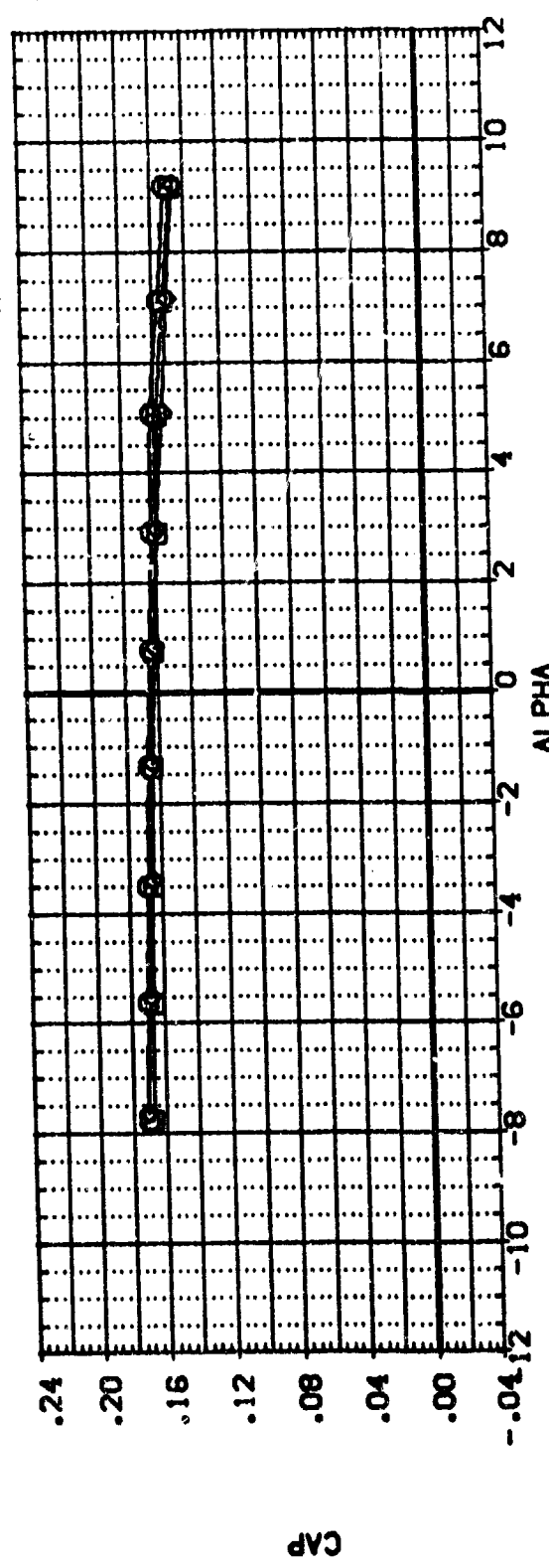
REFERENCE INFORMATION
SREF 6.1980 50.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000
 .000
 .000

DATA SET SYMOL CONFIGURATION DESCRIPTION
 (889005) MSFC 580(1A48) (034)(113)(S12)
 (889004) MSFC 580(1A48) (034)(114)(S12)
 (889001) MSFC 580(1A48) (034)(114)(S12)(US)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(CJMACH = 1.10

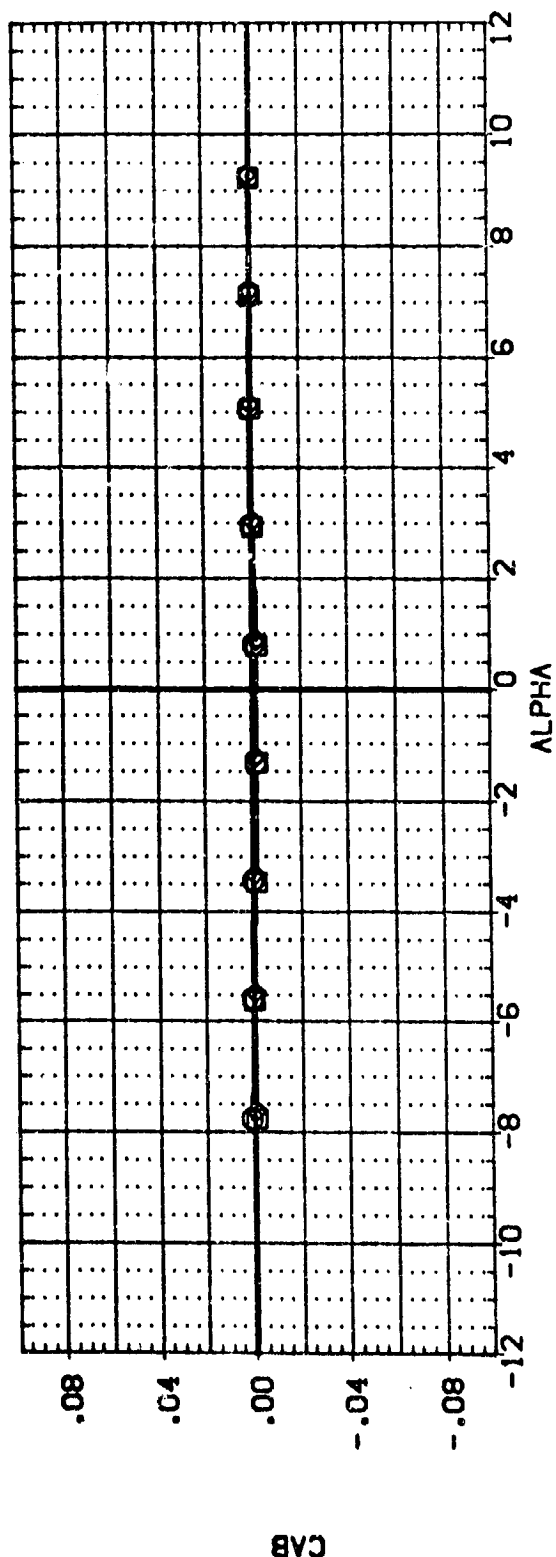
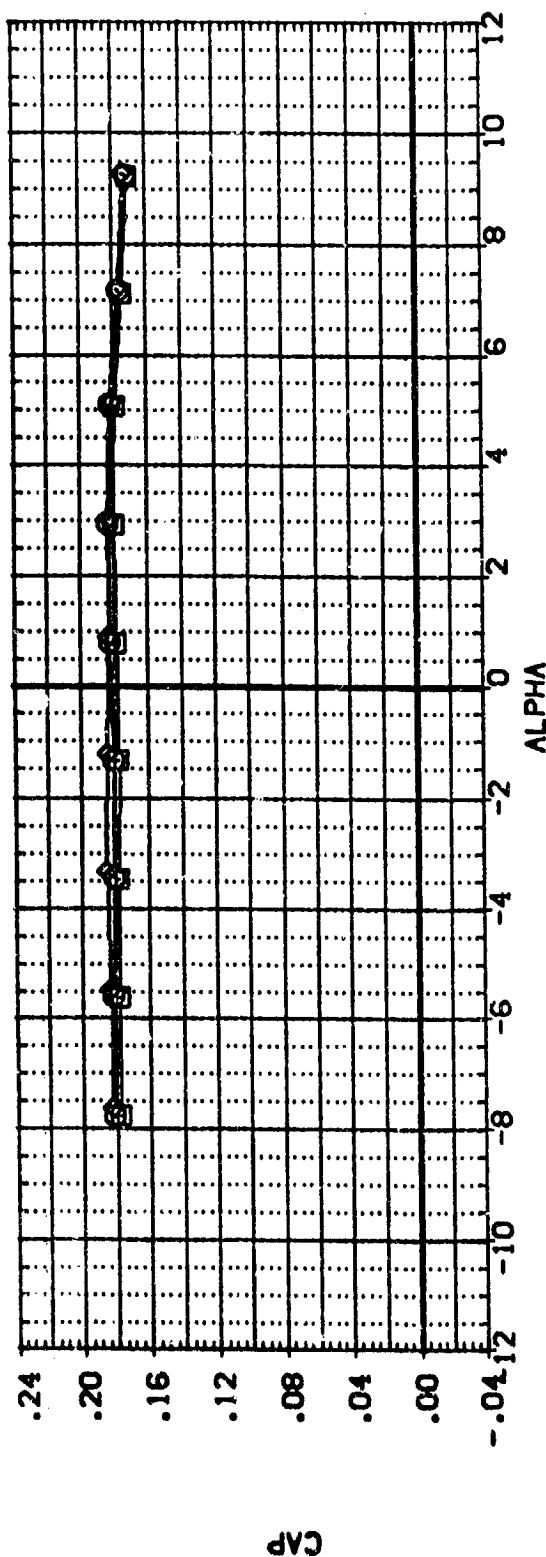
DATA SET SYMBOL
(B89005)
(B89004)
(B89001)

CONFIGURATION DESCRIPTION
MSC 580(1A48) (034)(T9)(S12)
MSC 580(1A48) (034)(T14)(S12)
MSC 580(1A48) (034)(T14)(S12)(US)

BETA
.000
.000
.000

ORBINC
.000
.000
.000

REFERENCE INFORMATION
SREF 6.1800 IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XTRP 2.7200 IN.
YTRP .0000 IN.
ZTRP .0000 IN.
SCALE .0040



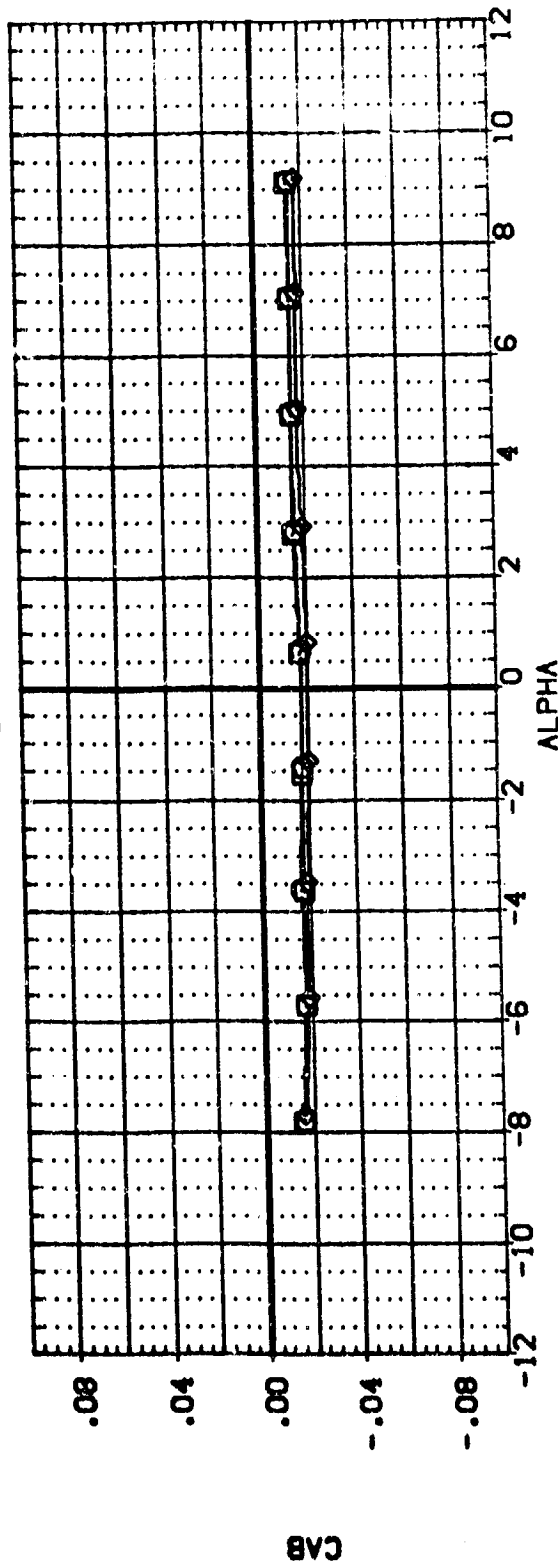
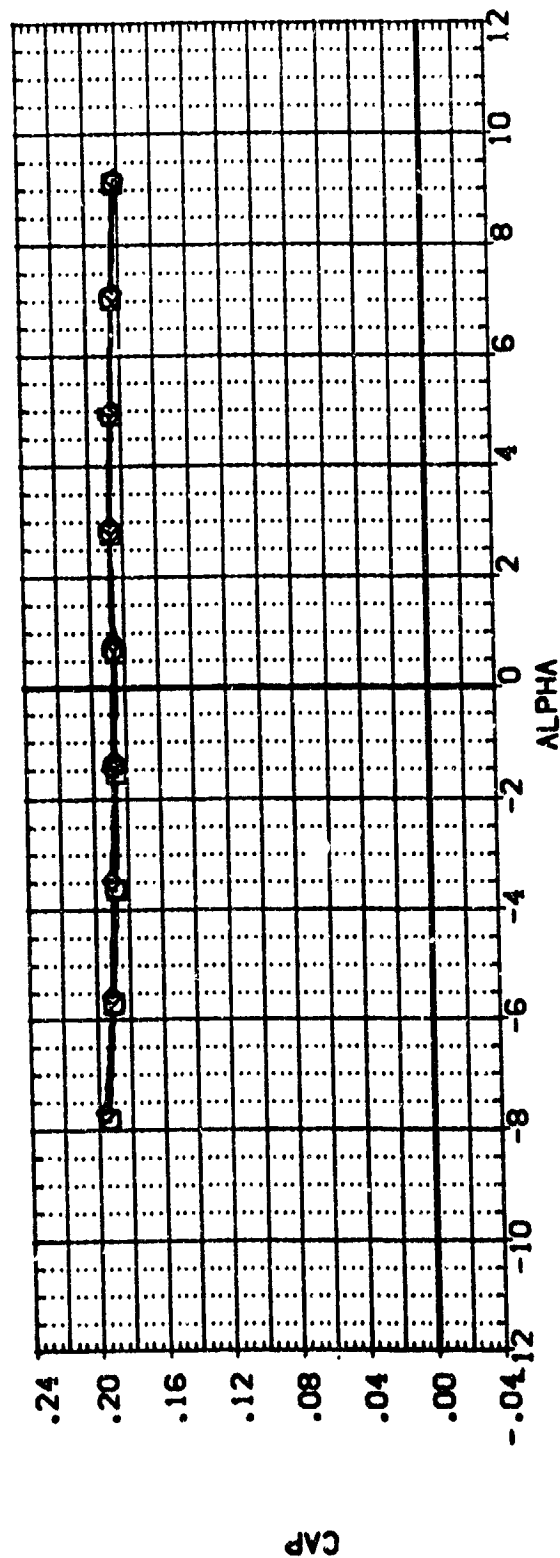
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(D)MACH = 1.25

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010

BETA ORBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888005) MSC 580(1A48) (C34)(T9)(S12)
 (888004) MSC 580(1A48) (C34)(T14)(S12)
 (888001) MSC 580(1A48) (C34)(T14)(S12)(US)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (CORBITER ONLY)

(E)MACH = 1.46

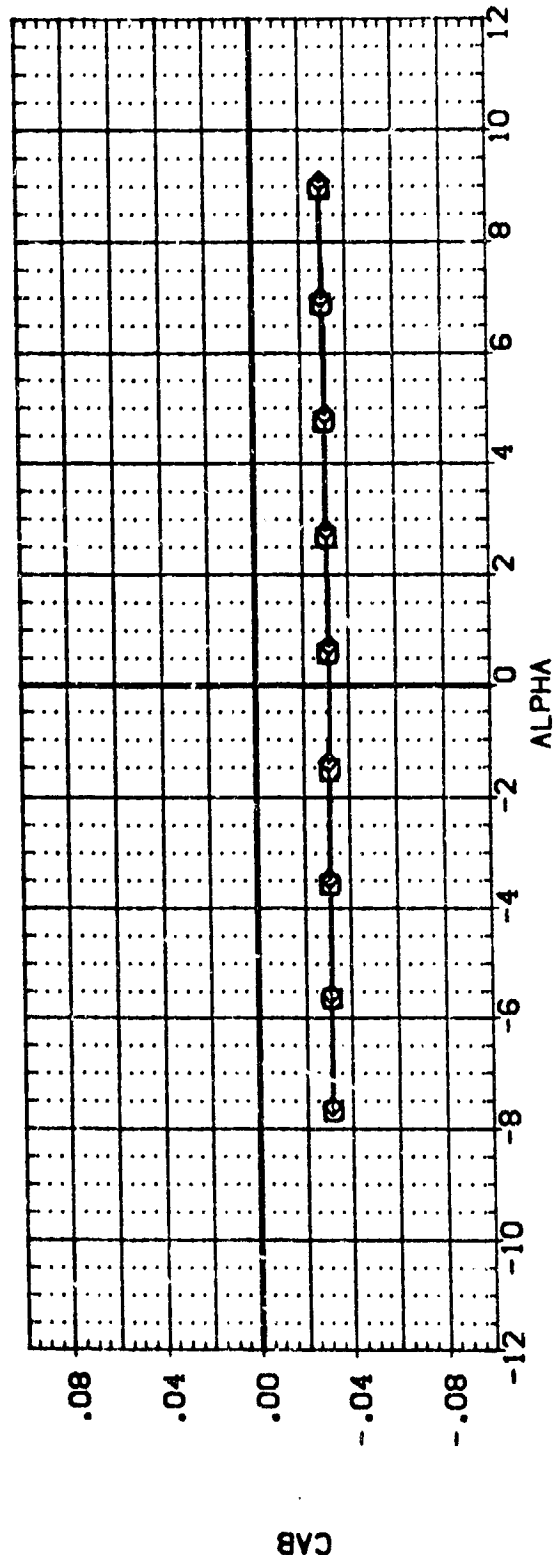
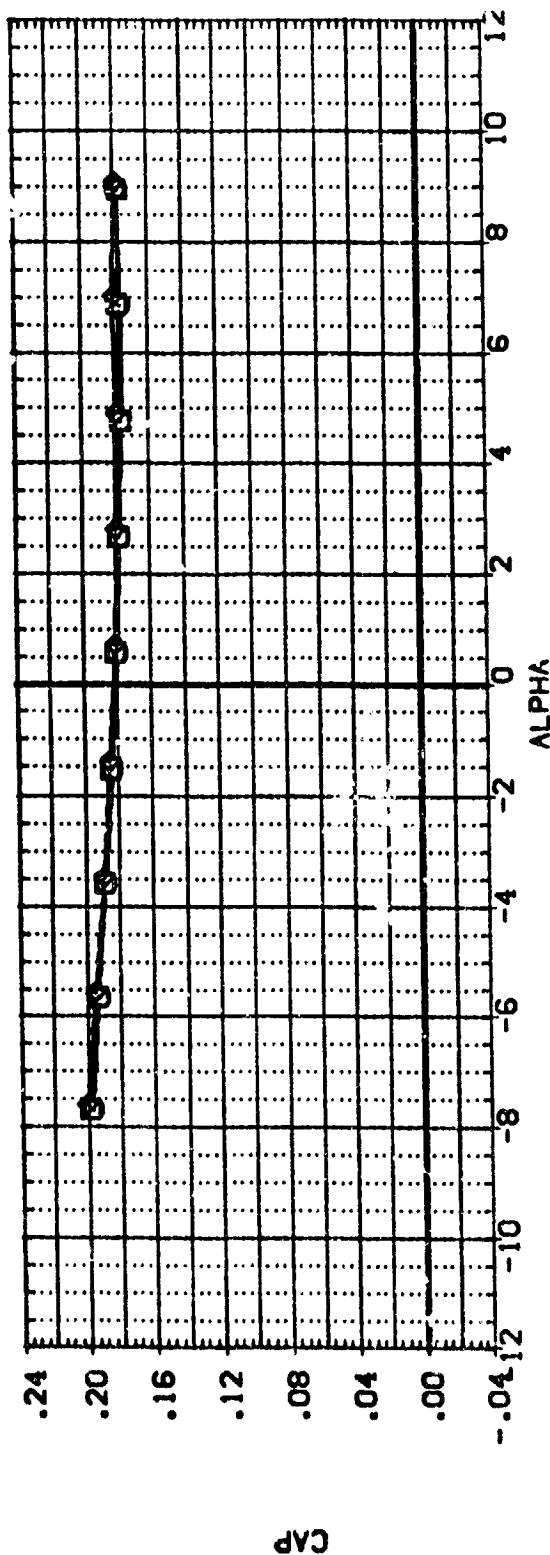


DATA SET SYMBOL
(889005)
(889004)
(889001)

CONFIGURATION DESCRIPTION
MSC 580(1A48) (034)(T9)(S12)
MSC 580(1A48) (034)(T14)(S12)
MSC 580(1A48) (034)(T14)(S12)(US)

BETA ORIGIN
.000
.000
.000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XREF 2.7200 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .0040



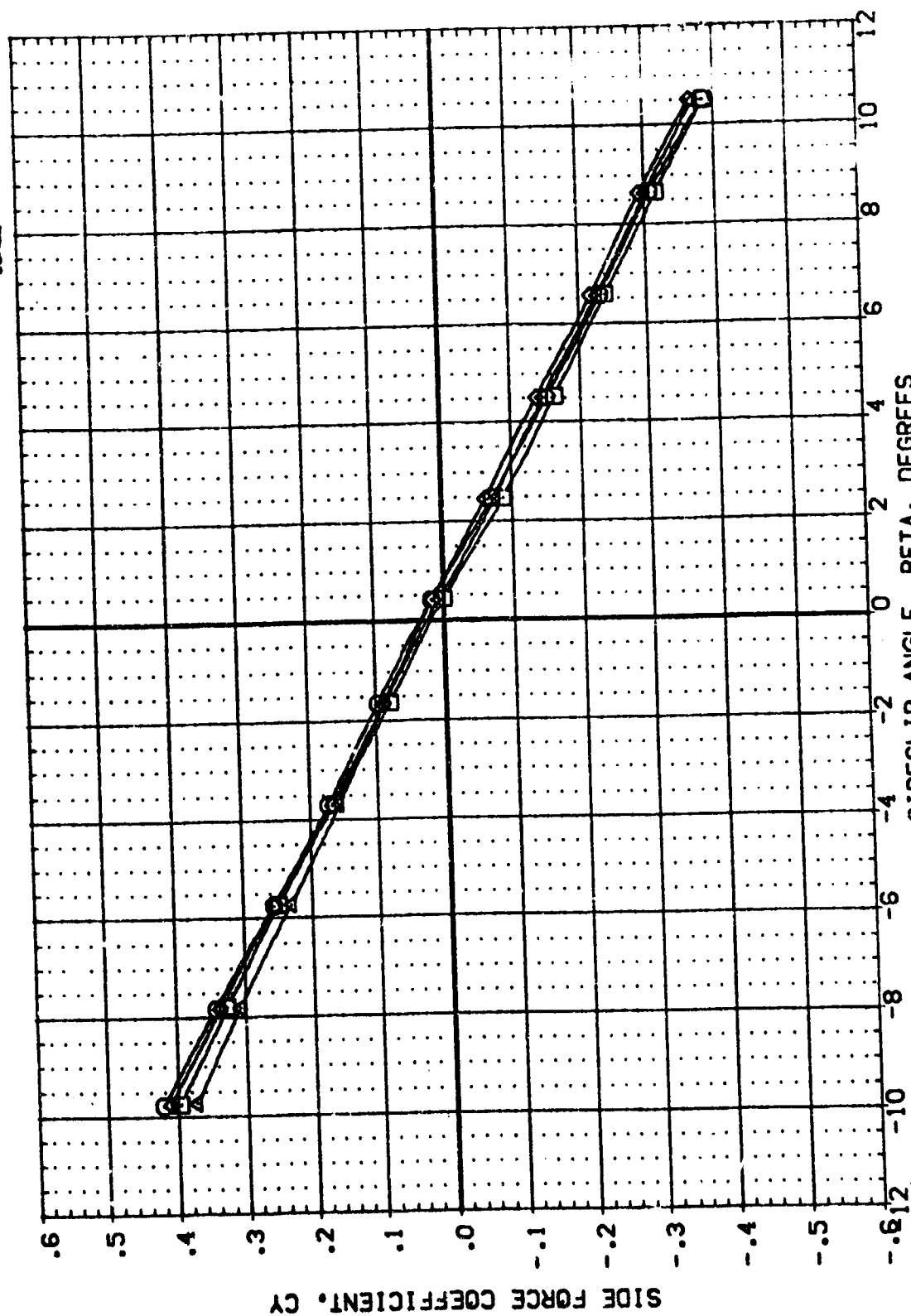
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(F)MACH = 1.97

REFERENCE INFORMATION
 SREF 6.1900 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORIGIN
 .000
 -5.000
 5.000

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (888011) MSFC 579(A37) (034)(T14)(S12)(U6)
 (888010) MSFC 579(A37) (034)(T14)(S12)(U6)
 (888012) MSFC 579(A37) (034)(T14)(S12)(U6)
 (888008) MSFC 579(A37) (034)(T19)(S12)



EFFECT OF A TACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

REFERENCE INFORMATION

SREF	6.1980	sq. in.
LREF	5.1600	in.
BREF	5.1600	in.
XMRP	2.7200	in.
YMRP	.0000	in.
ZMRP	.0000	in.
SCALE	.0040	

ALPHA ORBINC

.000	.000
-5.000	.000
5.000	.000

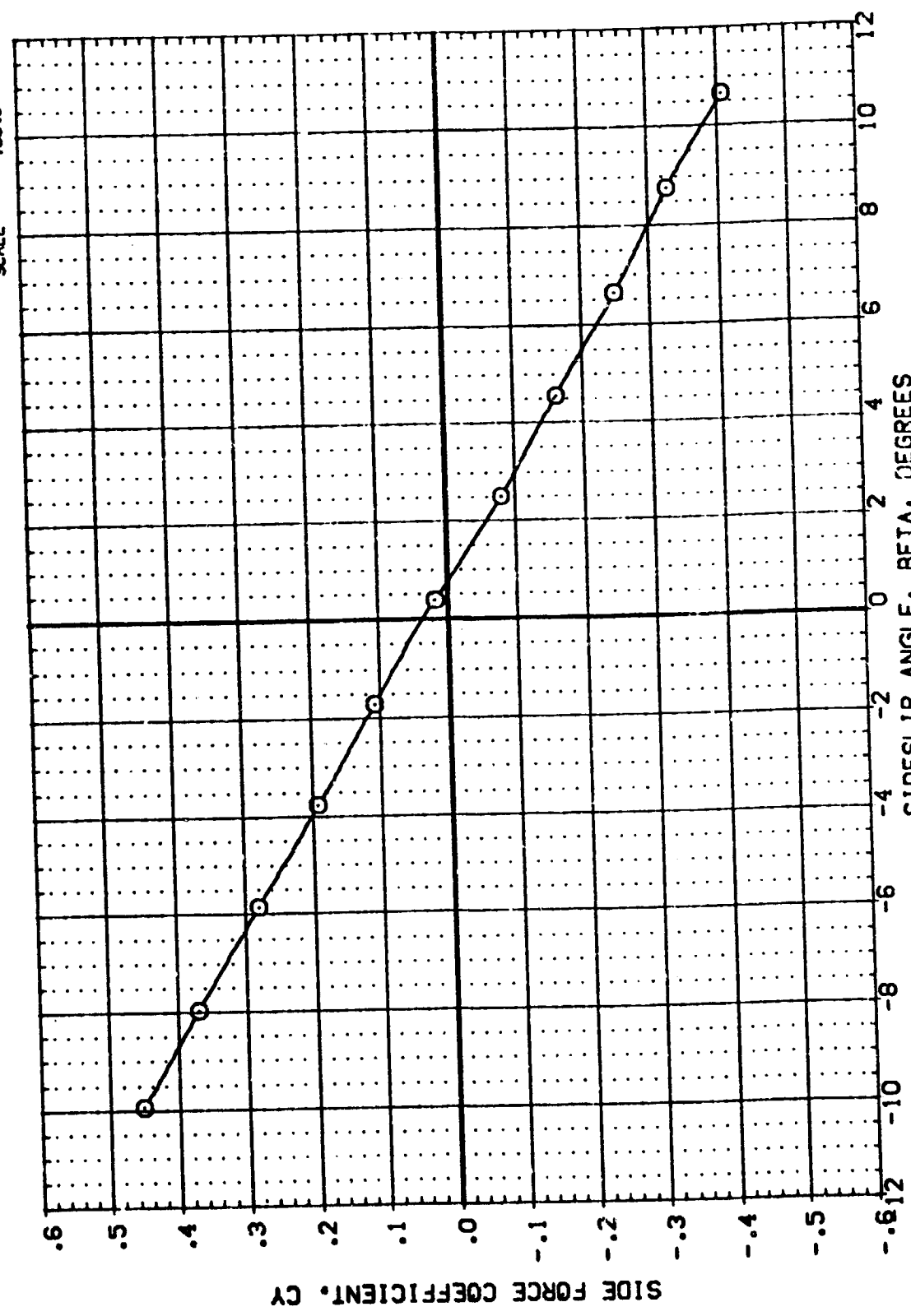
DATA SET SYMBOL CONFIGURATION DESCRIPTION

(B88011) KFC 579(1A37) (034)(114)(S12)(U6)

(B88010) DATA NOT AVAILABLE

(B88012) DATA NOT AVAILABLE

(B88008) DATA NOT AVAILABLE



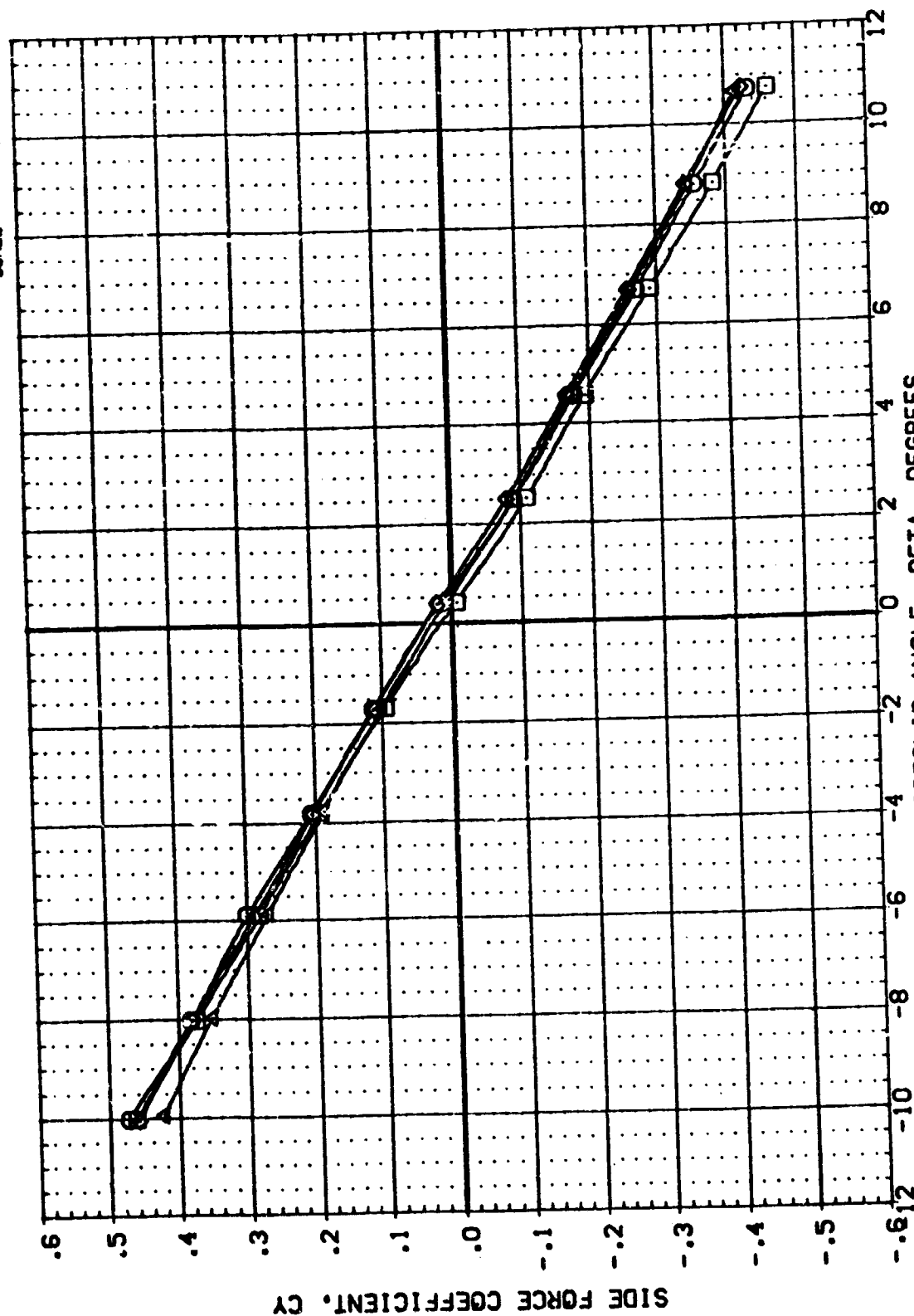
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (FIRST STAGE)

(B)MACH = .80

REFERENCE INFORMATION
 SREF 8.1980 SQ.IN.
 LREF 5.1500 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

ALPHA 0.000
 0.000
 5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) HSC 579(1A37) (034)(T14)(S12)(U6)
 (B88012) HSC 579(1A37) (034)(T14)(S12)(U6)
 (B88008) HSC 579(1A37) (034)(T9)(S12)



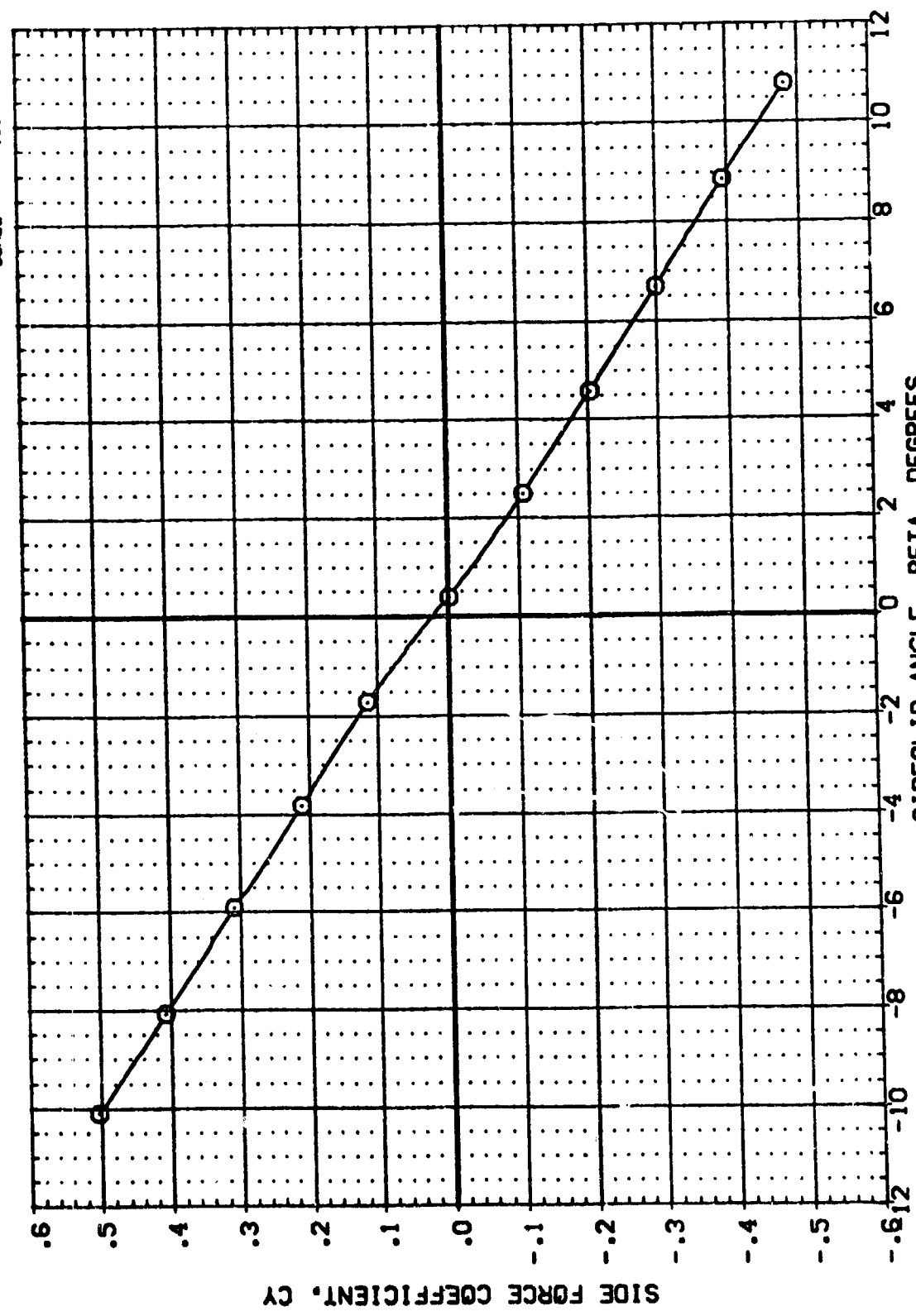
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(C)MACH = .89

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XAPP 2.7200 IN.
 YAPP .0000 IN.
 ZAPP .0000 IN.
 SCALE .0010

ALPHA 0.000
 0.000
 -5.000
 0.000

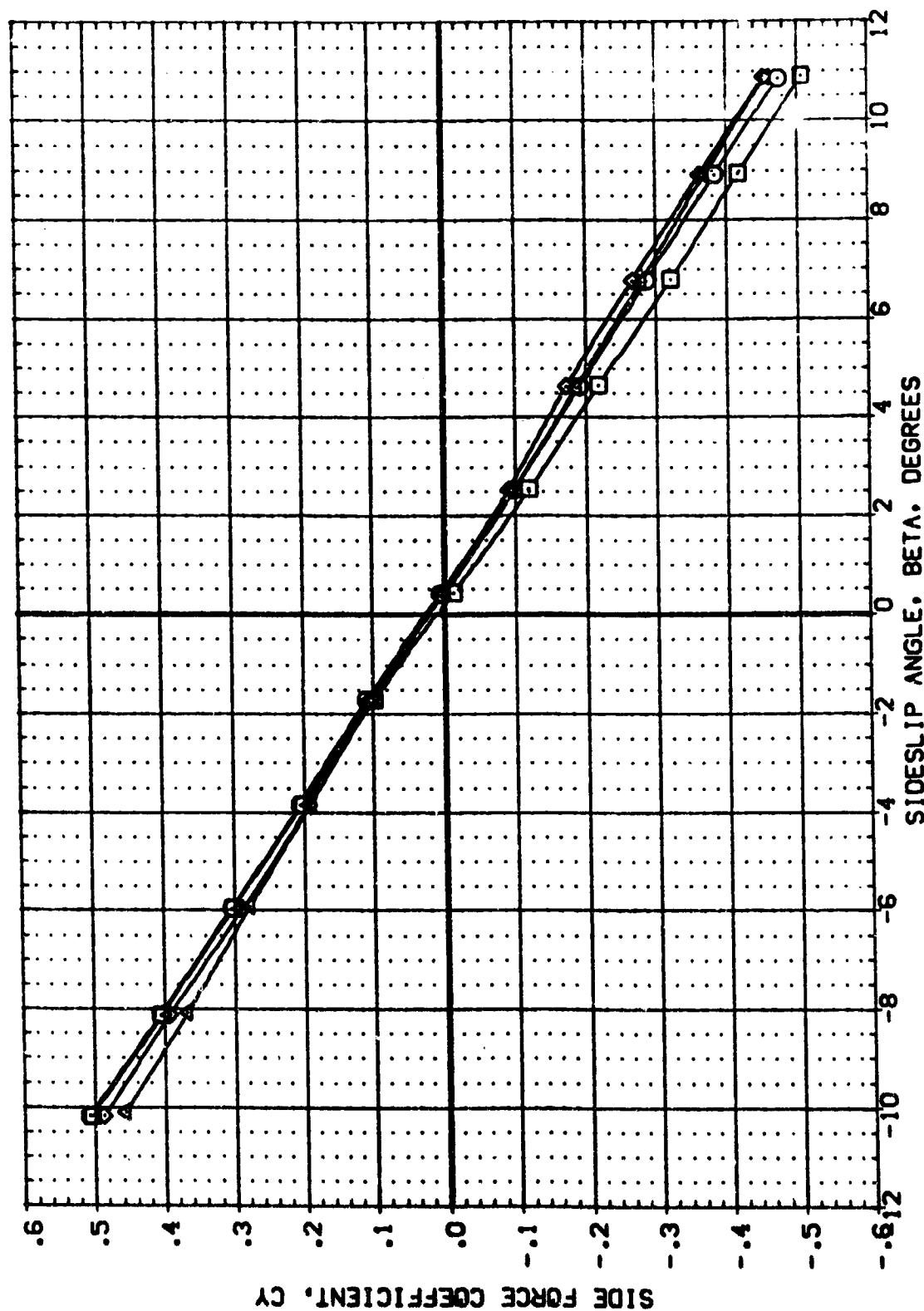
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSC 579(1A37) (034)(114)(S12)(US)
 (888010) DATA NOT AVAILABLE
 (888012) DATA NOT AVAILABLE
 (888008) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTRUDANCES ON DIRECT. CHARACT.(FIRST STAGE)

(O)MACH = 1.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBITING	REFERENCE INFORMATION
(888011)	MSFC 579(A37) (034)(T14)(S12)(U6)	.000	.000	SREF 6.1980 SQ.IN.
(888010)	MSFC 579(A37) (034)(T14)(S12)(U6)	-5.000	.000	LREF 5.1600 IN.
(888012)	MSFC 579(A37) (034)(T14)(S12)(U6)	5.000	.000	BREF 5.1600 IN.
(888008)	MSFC 579(A37) (034)(T9)(S12)	.000	.000	YREF 2.7200 IN.
				ZREF .0000 IN.
				SCALE .0040



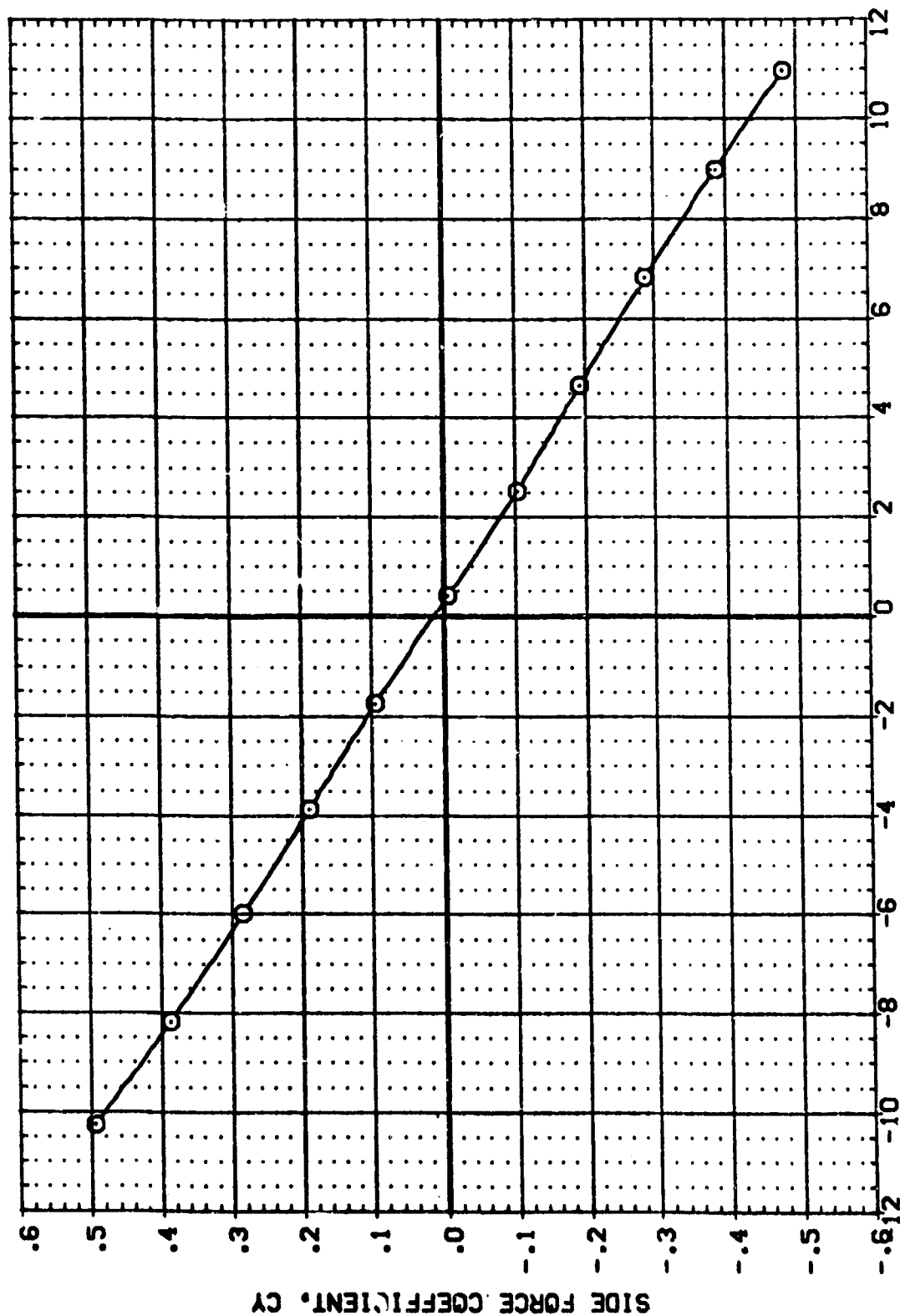
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE.)

(E)MACH = 1.10

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 ORBINC .000
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B86011) HSC 579(1A37) (C34)(T14)(S12)(U6)
 (B86010) DATA NOT AVAILABLE
 (B86012) DATA NOT AVAILABLE
 (B86008) DATA NOT AVAILABLE



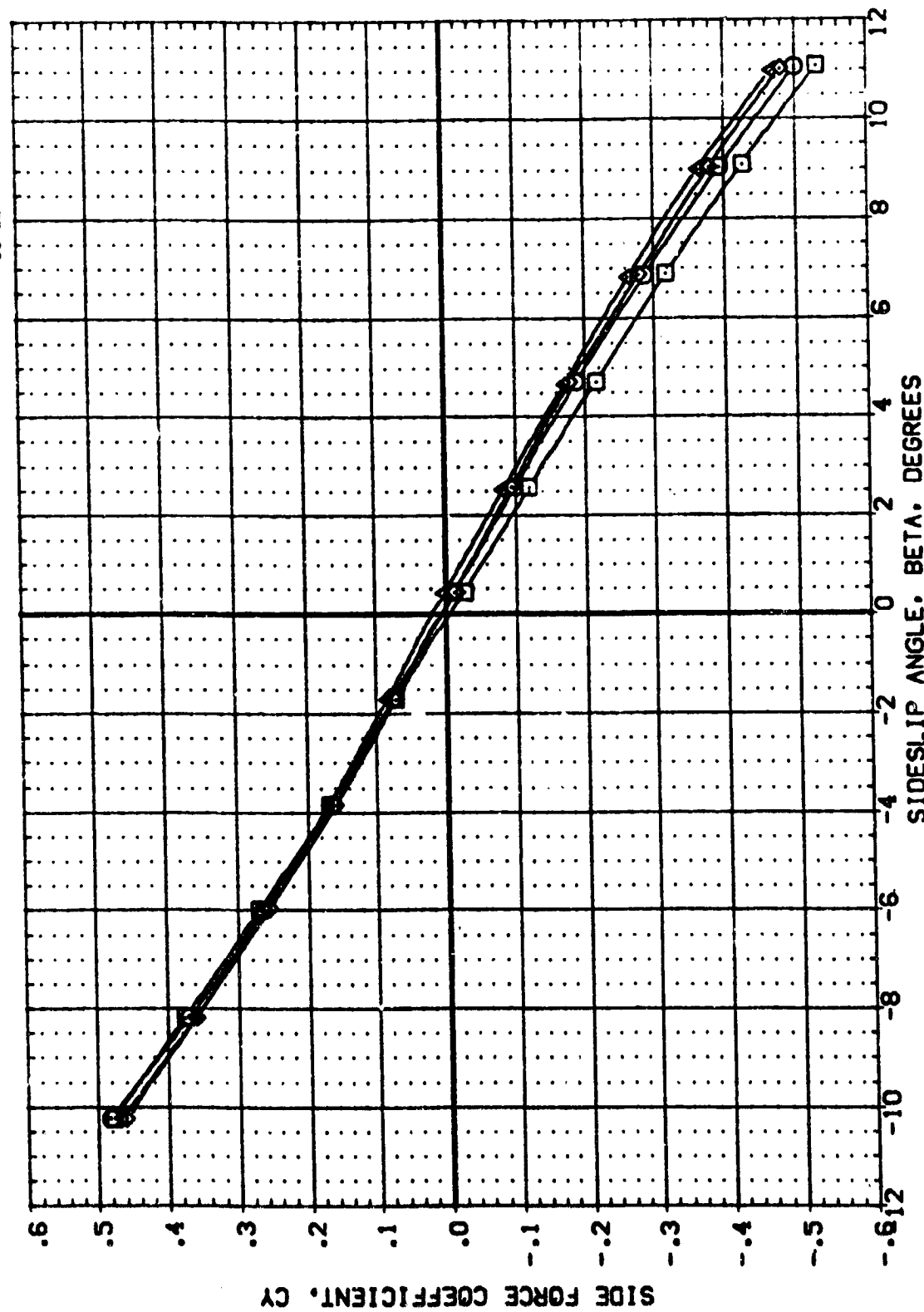
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(F)MACH = 1.20

REFERENCE INFORMATION
 SREF 6.1960 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 0.000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) HSC 575(1A37) (034)(114)(S12)(U6)
 (888010) HSC 575(1A37) (034)(114)(S12)(U6)
 (888012) HSC 575(1A37) (034)(114)(S12)(U6)
 (888008) HSC 575(1A37) (034)(114)(S12)(U6)

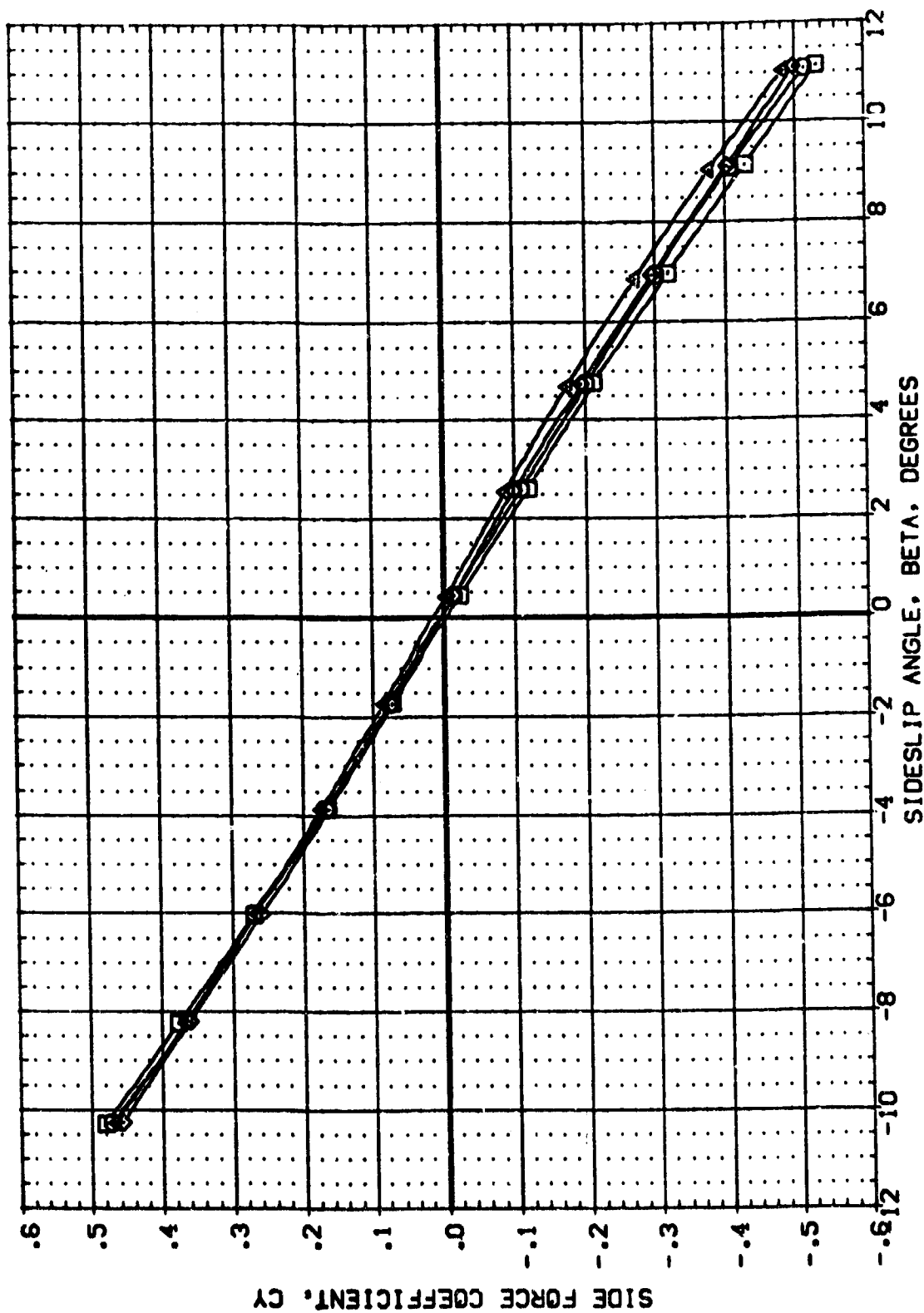


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000 .000
 -5.000 .000
 5.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (886011) MSC 579 (A37) (034) (T14) (S12) (U6)
 (886010) MSC 579 (A37) (034) (T14) (S12) (U6)
 (886012) MSC 579 (A37) (034) (T14) (S12) (U6)
 (886008) MSC 579 (A37) (034) (T19) (S12)



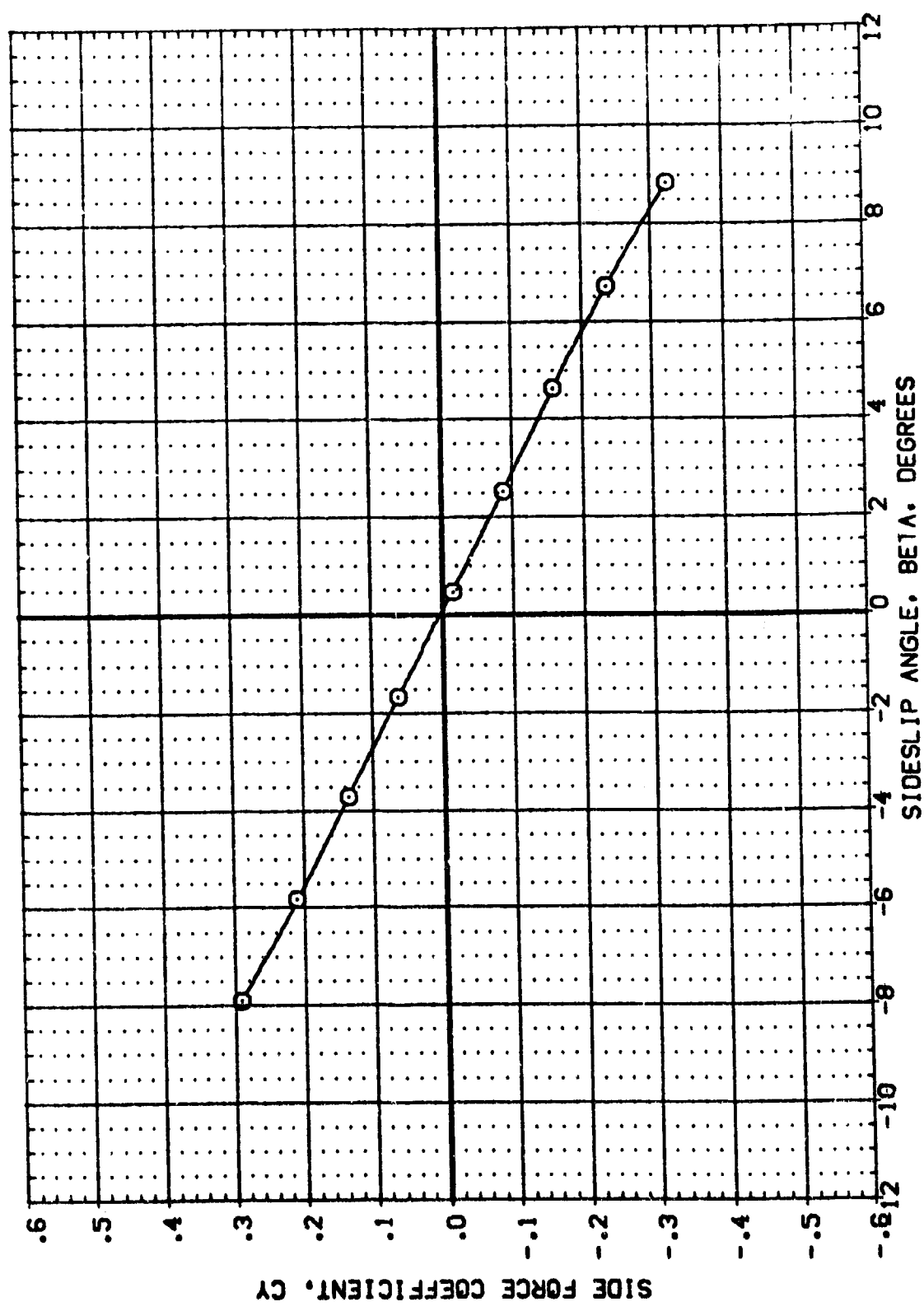
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (FIRST STAGE)

(H)MACH = 1.96

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) MSFC 579(1A37) (034)(114)(S12)(U6)
 (B88010) DATA NOT AVAILABLE
 (B88012) DATA NOT AVAILABLE
 (B88008) DATA NOT AVAILABLE

ALPHA ORBINC
 .000 .000
 -5.000 .000
 5.000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BRFF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

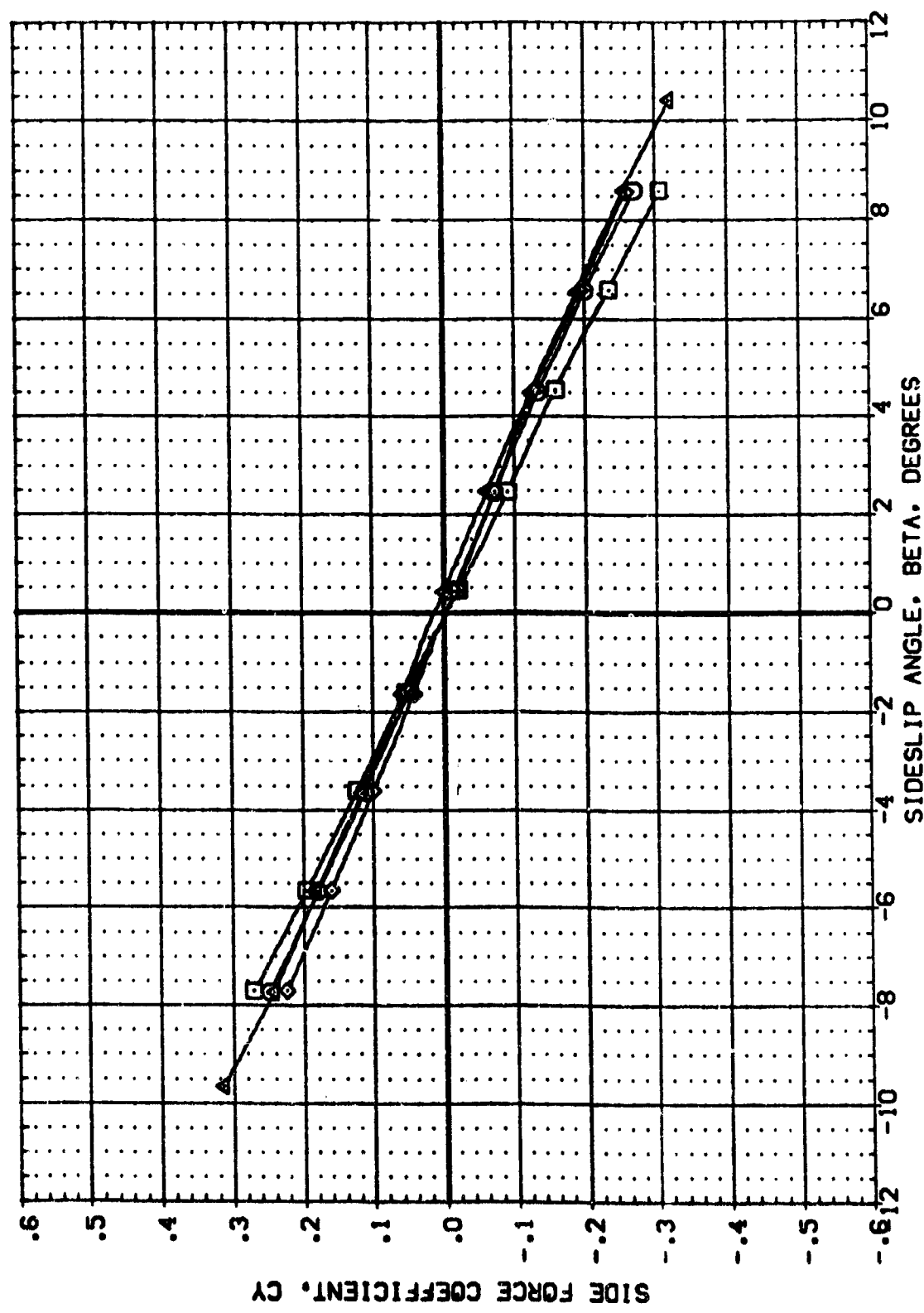


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(1)MACH = 3.48

DATA SET SYMBOL CONFIGURATION DESCRIPTION ALPHA ORB INC REFERENCE INFORMATION

(B88011)	MS-C 579(IA37) (034)(T14)(S12)(U6)	.000	.000	SREF	6.1980	50. IN.
(B88010)	MS-C 579(IA37) (034)(T14)(S12)(U6)	-5.000	.000	LREF	5.1600	IN.
(B88012)	MS-C 579(IA37) (034)(T14)(S12)(U6)	5.000	.000	BREF	5.1600	IN.
(B88008)	MS-C 579(IA37) (034)(T14)(S12)(U6)	.000	.000	XPRP	2.7000	IN.
				YPRP	.0000	IN.
				ZPRP	.0000	IN.
				SCALE	.0040	



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

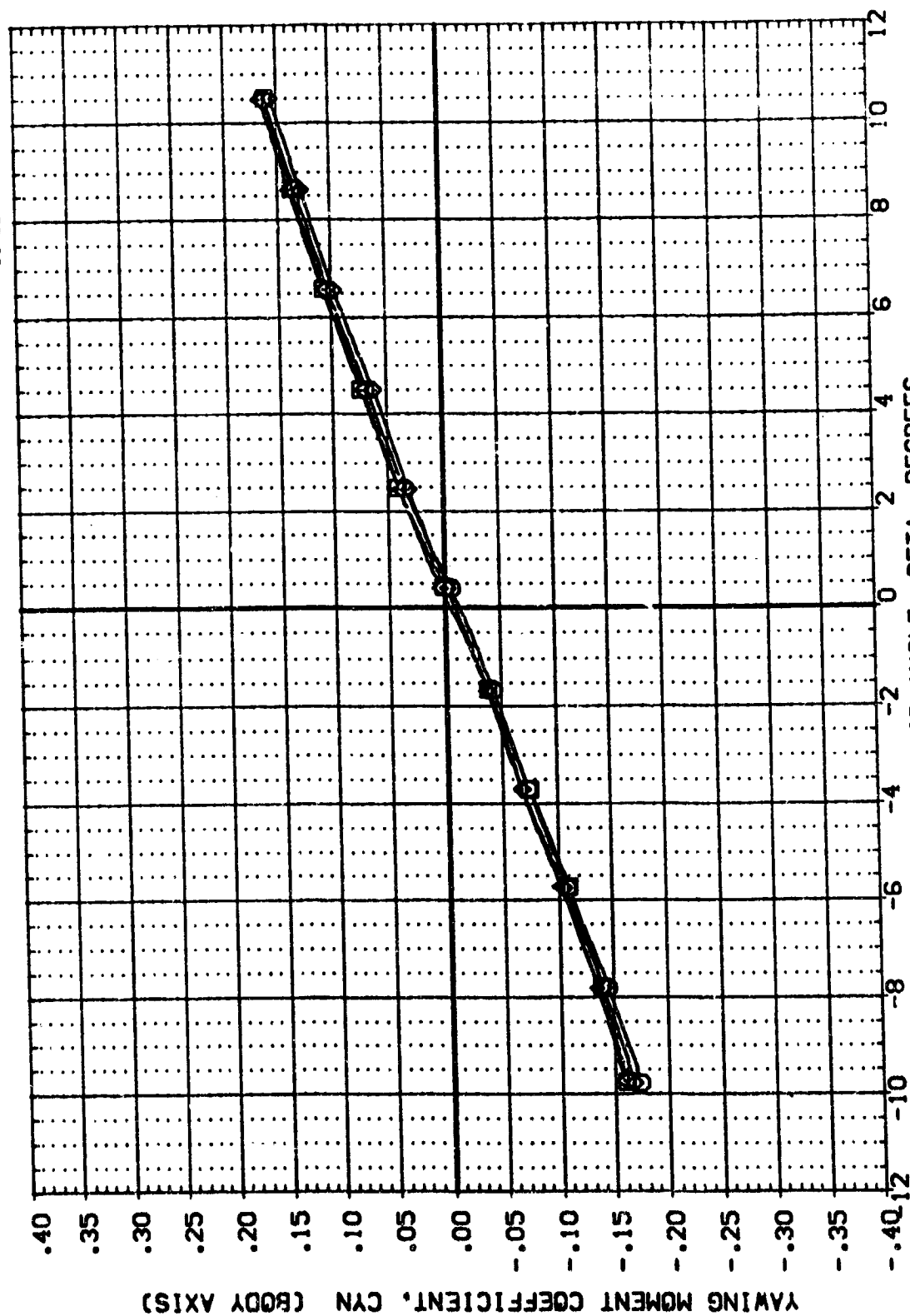
(J)MACH = 4.96

DATA SET SYMBO
 (888011)
 (888010)
 (888012)
 (888008)

ALPHA 0.000
 5.000
 5.000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 MREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

CONFIGURATION DESCRIPTION
 HSC 579(IA37) (034)(T14)(S12)(U6)
 HSC 579(IA37) (034)(T14)(S12)(U6)
 HSC 579(IA37) (034)(T14)(S12)(U6)
 HSC 579(IA37) (034)(T14)(S12)(U6)



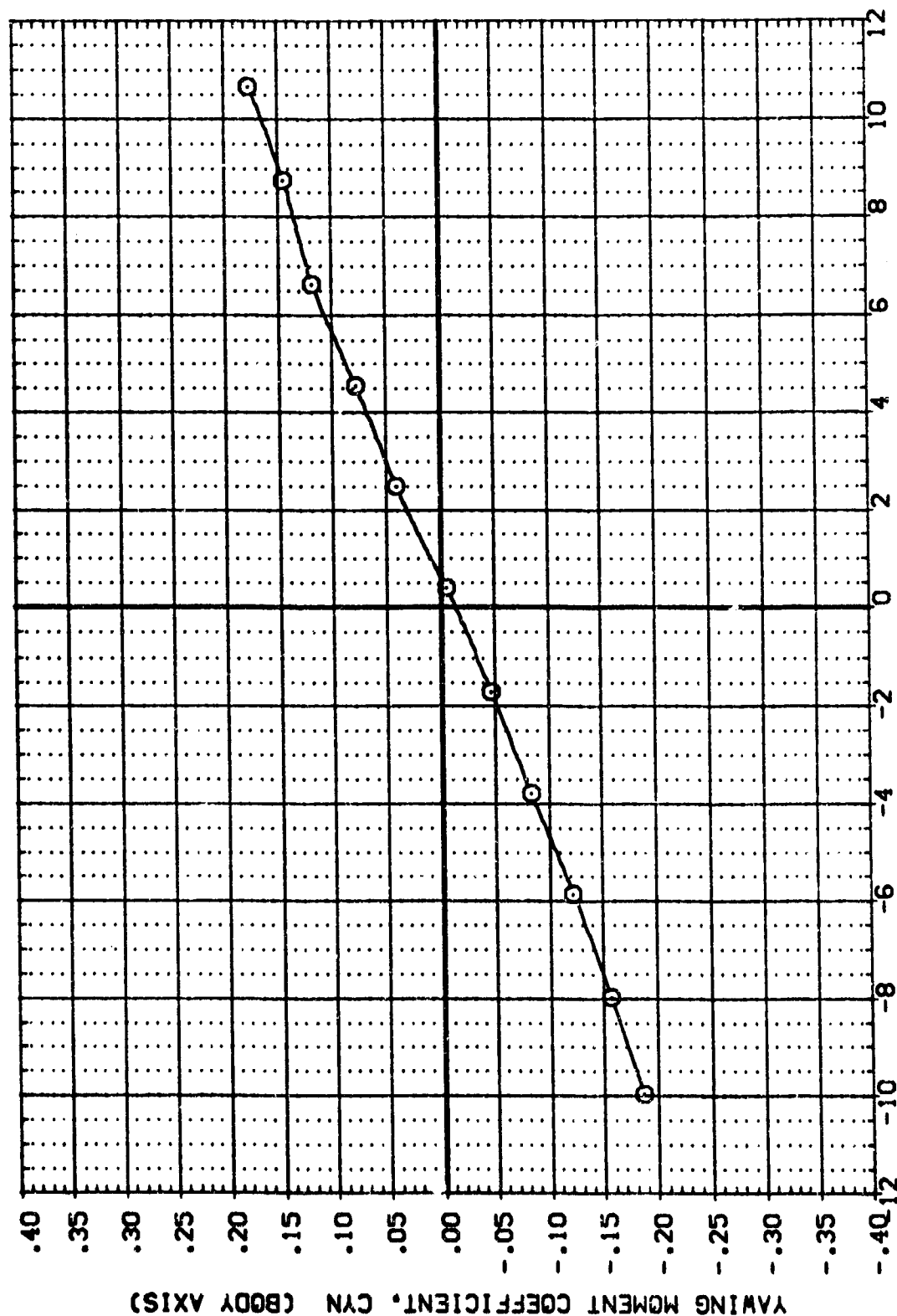
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (A)MACH = .60
 PAGE 90



DATA SET SYMBOL: (B88011)
CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(T14)(S12)(U6)
DATA NOT AVAILABLE
DATA NOT AVAILABLE
DATA NOT AVAILABLE

ALPHA: .000
ORBIT: .000
-5.000
5.000
.000

REFERENCE INFORMATION:
SREF: 6.1960 SQ. IN.
LREF: 5.1600 IN.
BREF: 5.1600 IN.
XMRP: 2.7200 IN.
YMRP: .0000 IN.
ZMRP: .0000 IN.
SCALE: .0040



SIDESLIP ANGLE, BETA, DEGREES

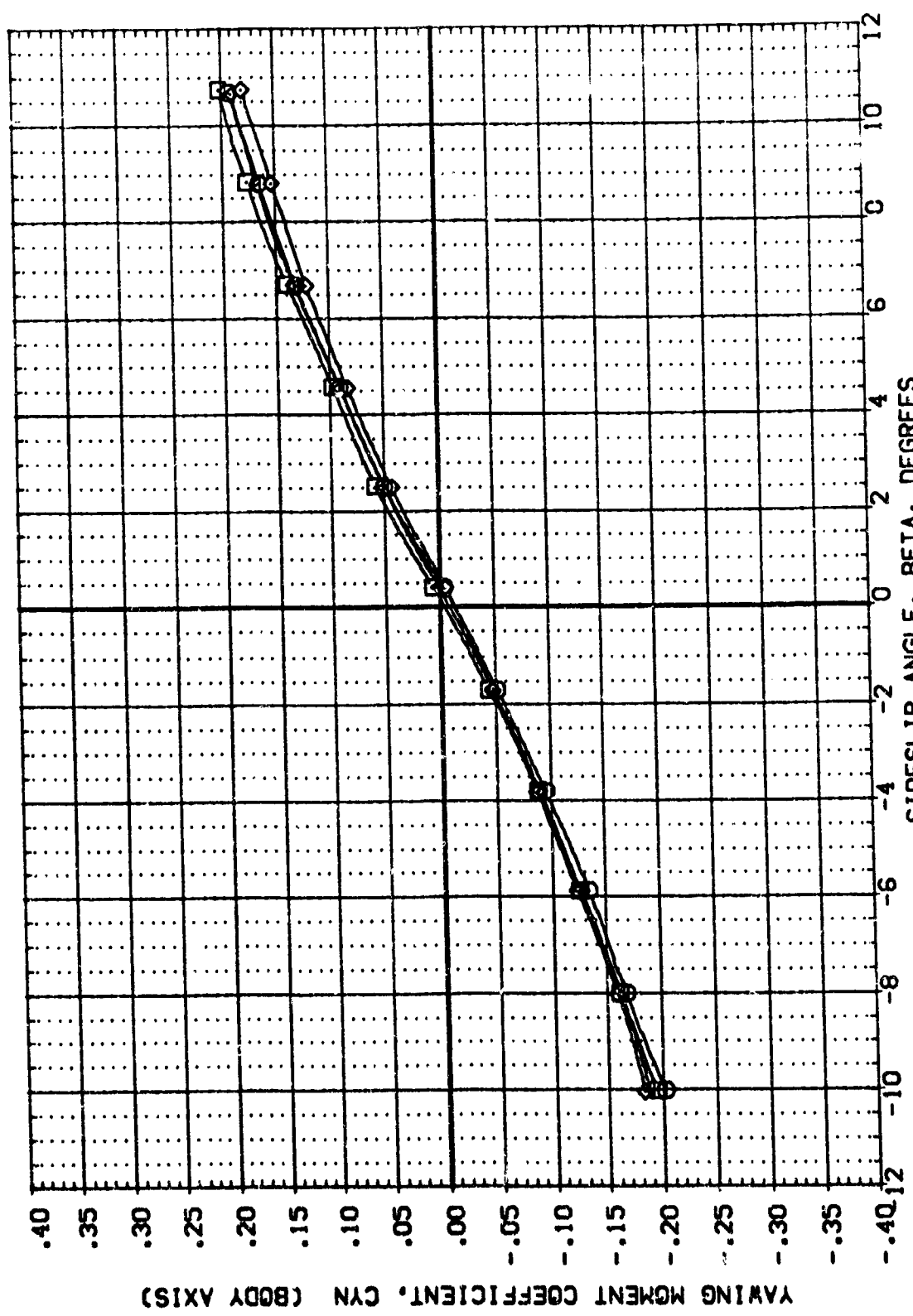
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(B)MACH = .80

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0340

ALPHA 0.000
 OSBINC 0.000
 -5.000
 5.000
 .003

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSFC 5791(A37) (034)(114)(S12)(U6)
 (888010) MSFC 5791(A37) (034)(114)(S12)(U6)
 (888012) MSFC 5791(A37) (034)(114)(S12)(U6)
 (888008) MSFC 5791(A37) (034)(119)(S12)



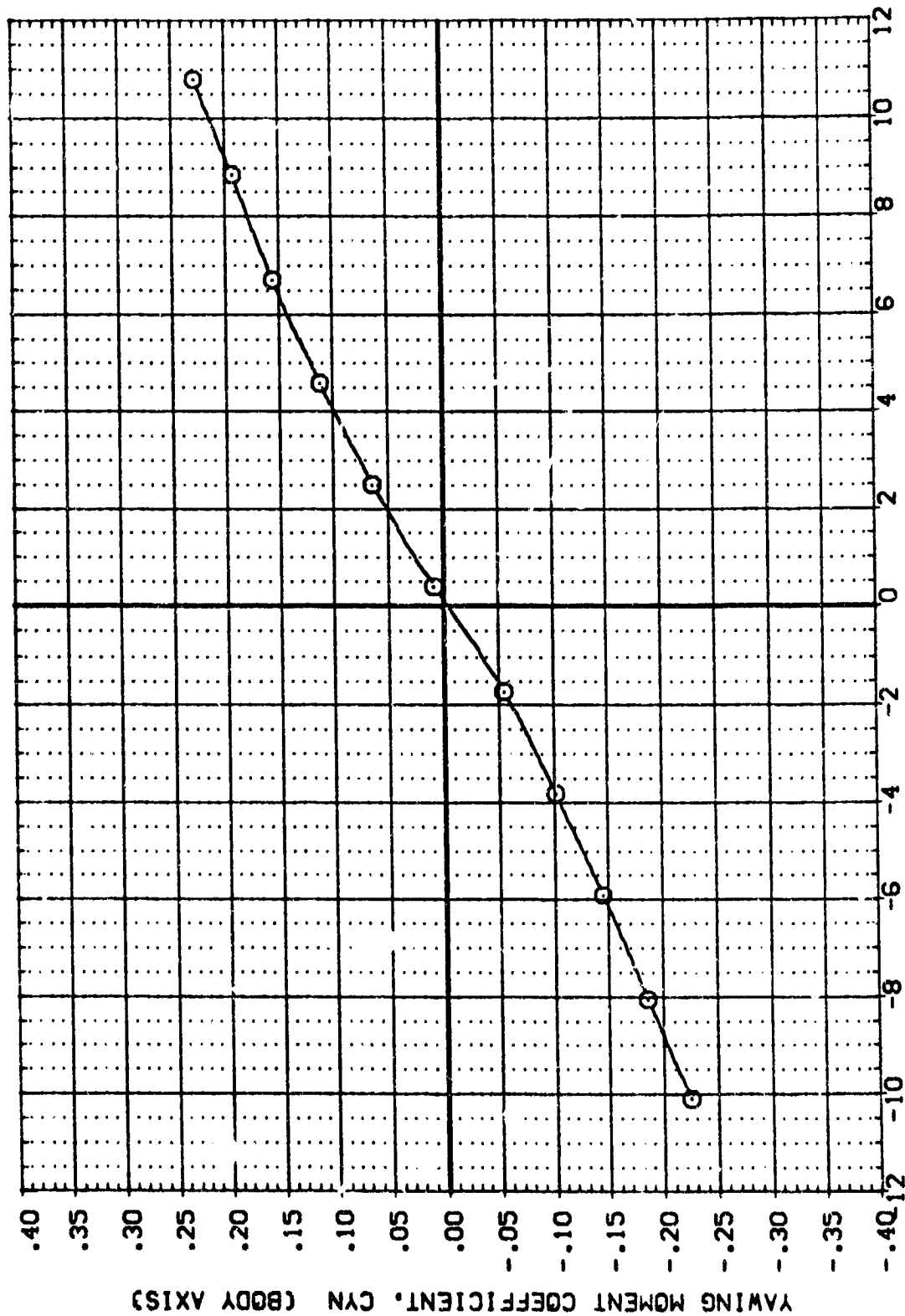
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)



DATA SET SYMBOL: (888011)
CONFIGURATION DESCRIPTION: (888010)
MSFC 579(1A37) (034)(T14)(S12)(U6)
DATA NOT AVAILABLE
(888012)
DATA NOT AVAILABLE
(888006)

ALPHA: .000
ORBIT: .000
-5.000
5.000
.000

REFERENCE INFORMATION:
SREF: 6.1980 SQ. IN.
LREF: 5.1600 IN.
BREF: 5.1600 IN.
XMRP: 2.7200 IN.
YMRP: .0000 IN.
ZMRP: .0000 IN.
SCALE: .0040



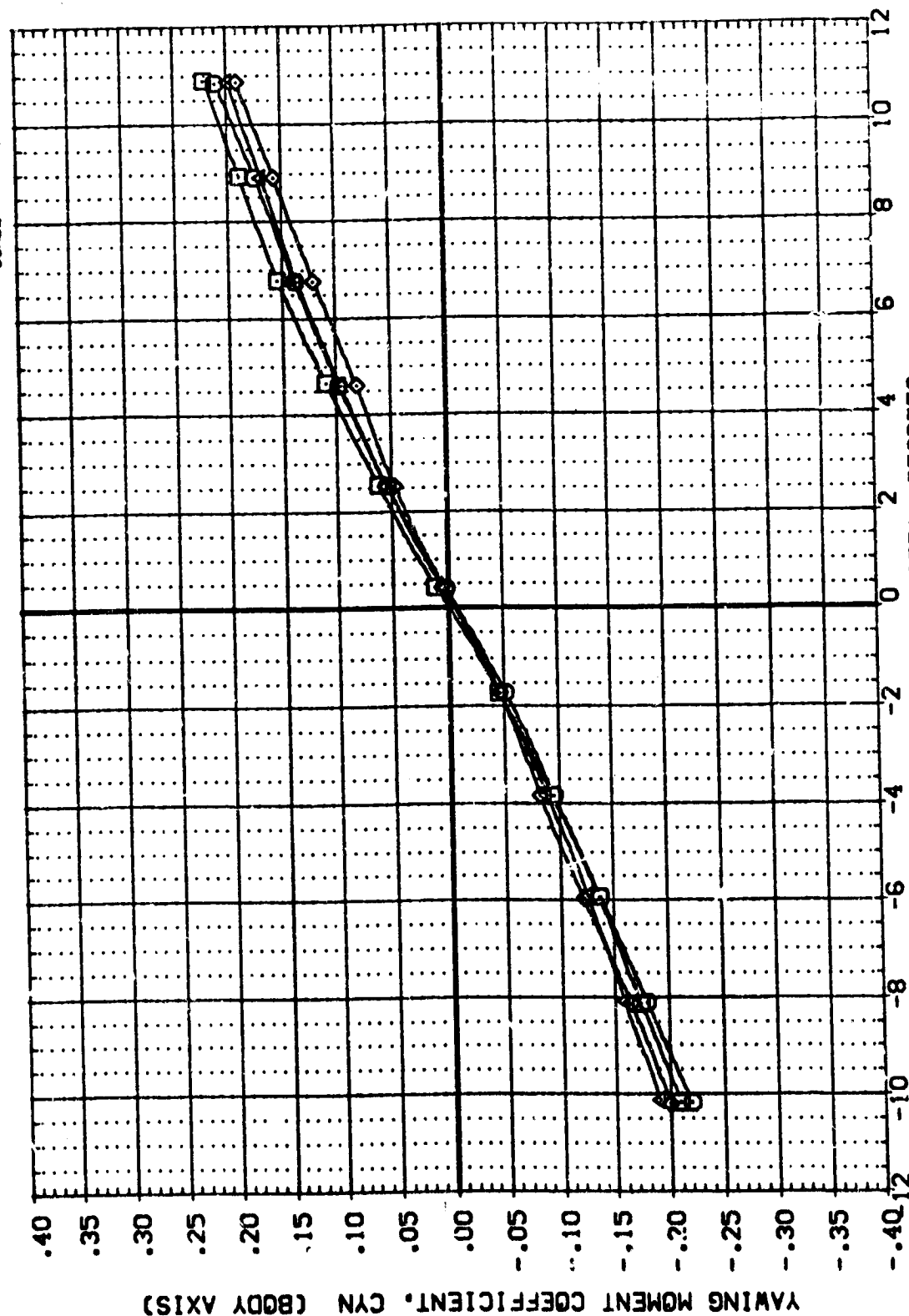
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (FIRST STAGE)

(D)MACH = 1.00

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1000 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000
 .000
 .000
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) MSC 573(1A37) (034)(114)(512)(U6)
 (B88010) MSC 573(1A37) (034)(114)(512)(U6)
 (B88012) MSC 573(1A37) (034)(114)(512)(U6)
 (B88008) MSC 573(1A37) (034)(119)(512)



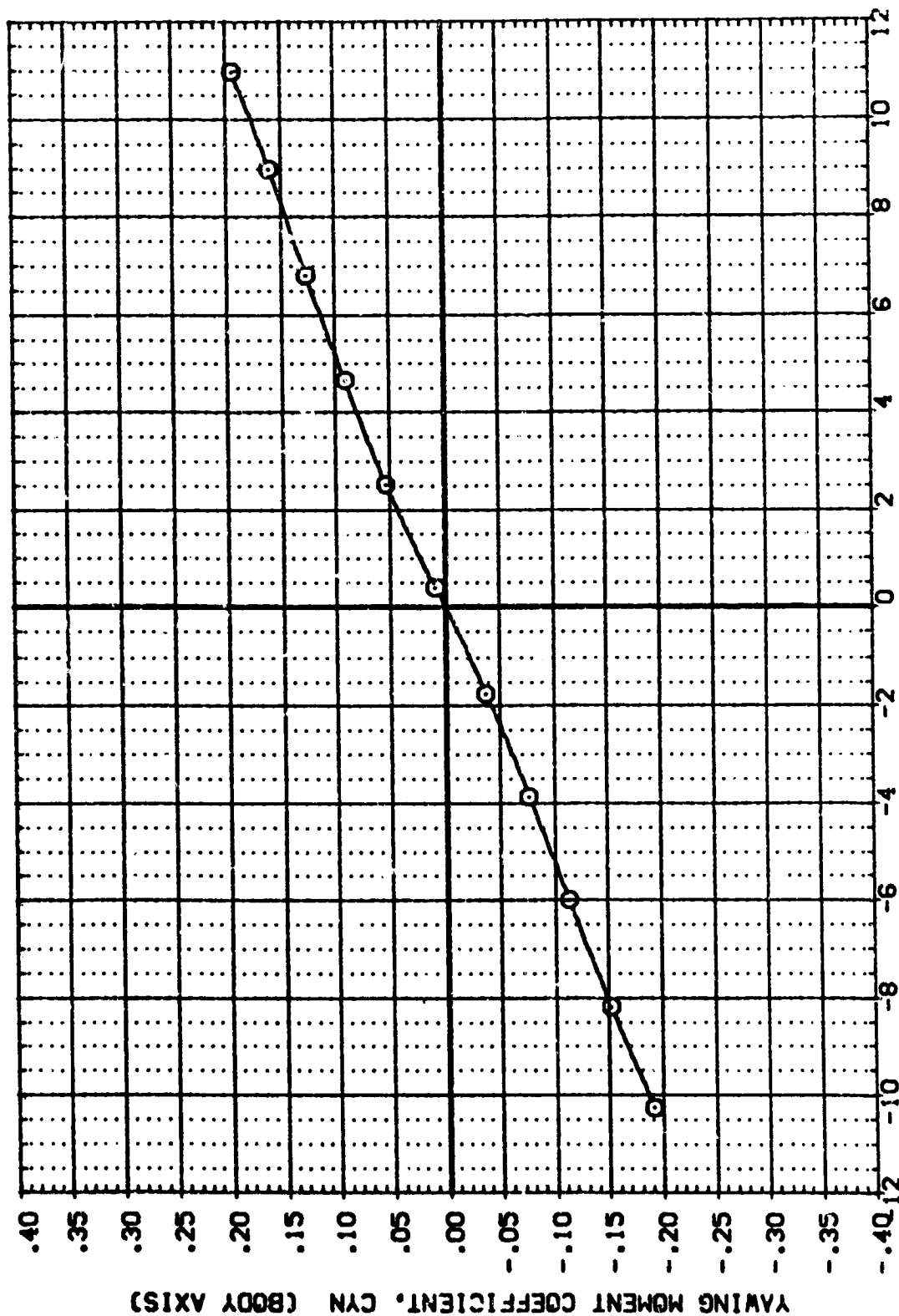
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)



DATA SET SYMBOL CONFIGURATION DESCRIPTION
(B88011) MSC 579(1A37) (G34)(T14)(S12)(US)
(B88010) DATA NOT AVAILABLE
(B88012) DATA NOT AVAILABLE
(B88008) DATA NOT AVAILABLE

ALPHA ORBING
 .000
 .000
 .000
 .000

REFERENCE INFORMATION
SREF 6.1980 50. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0040



SIDESLIP ANGLE, BETA, DEGREES

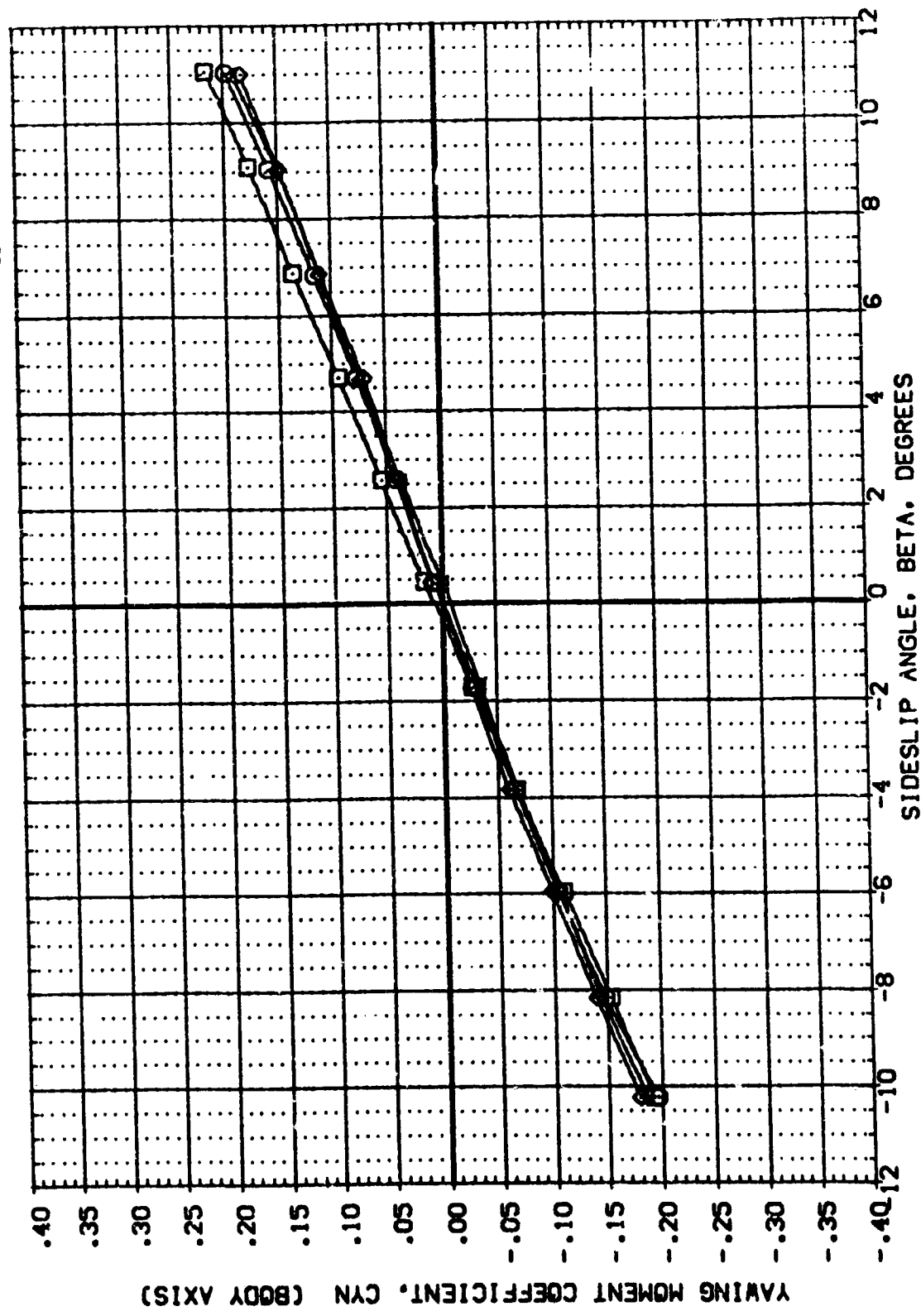
EFFECT OF ATTACH STRUCTURE AND PROTRUSANCES ON DIRECT. CHARACT.(FIRST STAGE)

(F)MACH = 1.20

REFERENCE INFORMATION
 SREF 6.1980 SO.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 0.000
 -5.000
 5.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) MSFC 579(A37) (034)(T14)(S12)(U6)
 (B88010) MSFC 579(A37) (034)(T14)(S12)(U6)
 (B88012) MSFC 579(A37) (034)(T14)(S12)(U6)
 (B88008) MSFC 579(A37) (034)(T9)(S12)



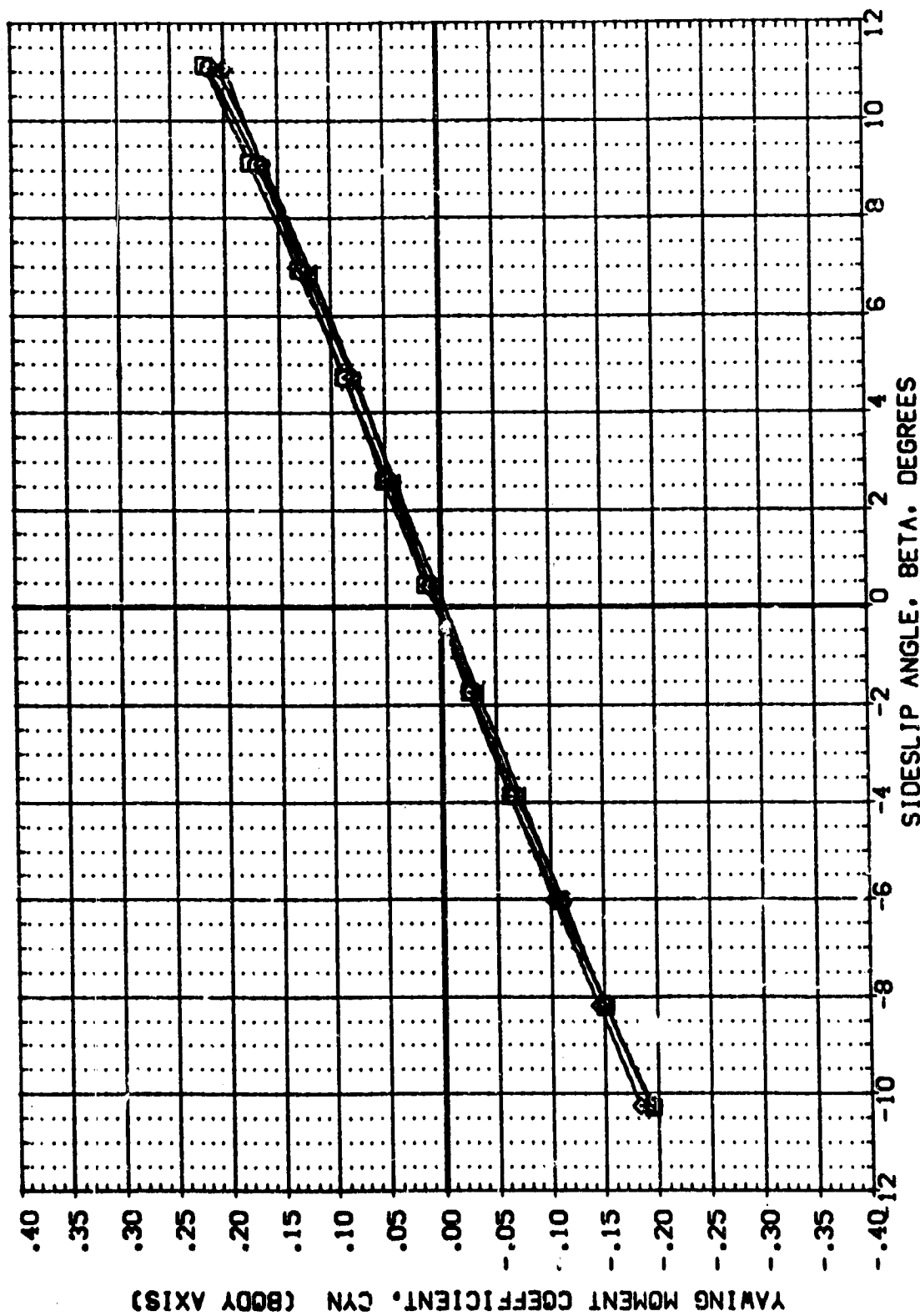
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(G)MACH = 1.46



DATA SET SYMBOL CONFIGURATION DESCRIPTION ALPHA OMBINC REFERENCE INFORMATION

(000011)	MSC 579 (A37) (034) (T14) (S12) (US)	.000	.000	SREF 6.1980 SQ. IN.
(000010)	MSC 579 (A37) (034) (T14) (S12) (US)	-5.000	.000	LREF 5.1800 IN.
(000012)	MSC 579 (A37) (034) (T14) (S12) (US)	5.000	.000	BREF 5.1800 IN.
(000008)	MSC 579 (A37) (034) (T14) (S12) (US)	5.000	.000	XHBP 2.7200 IN.
				YHBP .0000 IN.
				ZHBP .0000 IN.
				SCALE .0040



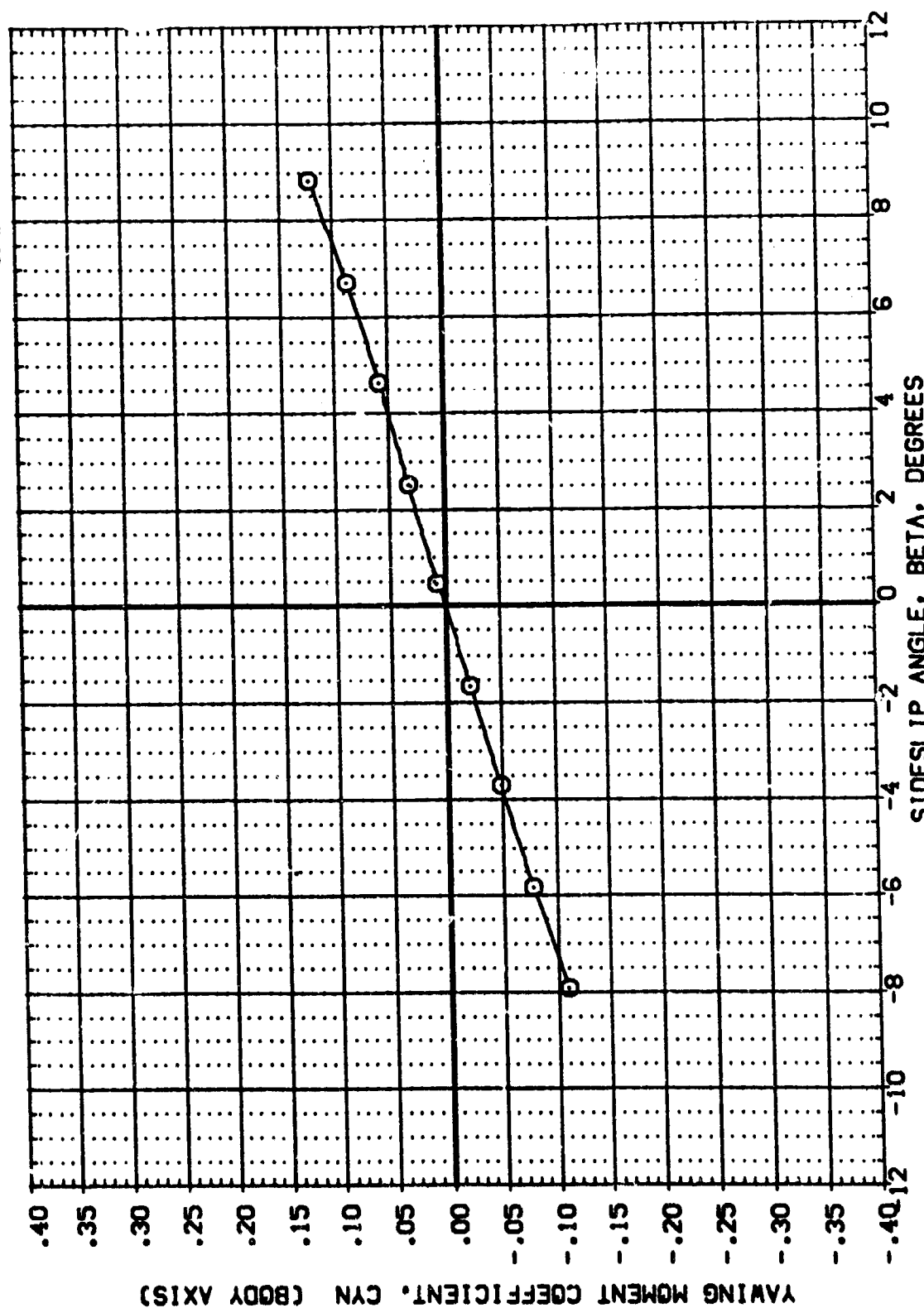
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(H)MACH = 1.96

REFERENCE INFORMATION
 SREF 6.198C SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA CRBINC
 .000
 .000
 .000
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) HSC 579(1A37) (C34)(T14)(S12)(U6)
 (B88010) DATA NOT AVAILABLE
 (B88012) DATA NOT AVAILABLE
 (B88008) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(1)MACH = 3.48

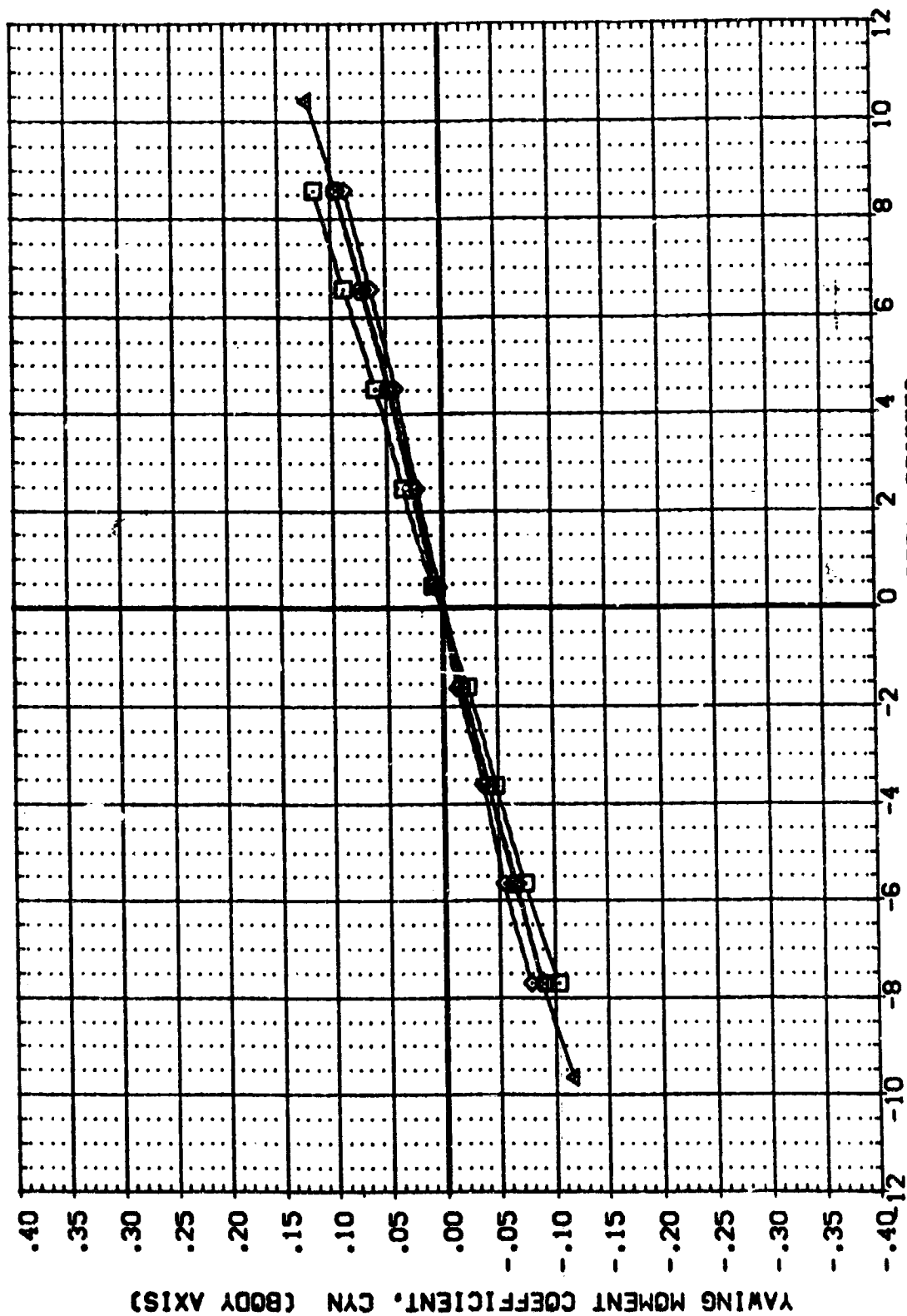
DATA SET SYMBOL CONFIGURATION DESCRIPTION

(888011)	MSC 579(1A37) (034)(T14)(S12)(U6)
(888010)	MSC 579(1A37) (034)(T14)(S12)(U6)
(888012)	MSC 579(1A37) (034)(T14)(S12)(U6)
(888008)	MSC 579(1A37) (034)(T9)(S12)

ALPHA 0.000
0.000
-5.000
5.000

REFERENCE INFORMATION

SREF	6.1980	SD.IN.
LRREF	5.1600	IN.
BRREF	5.1600	IN.
YPRP	2.7200	IN.
ZPRP	.0000	IN.
SCALE	.0040	



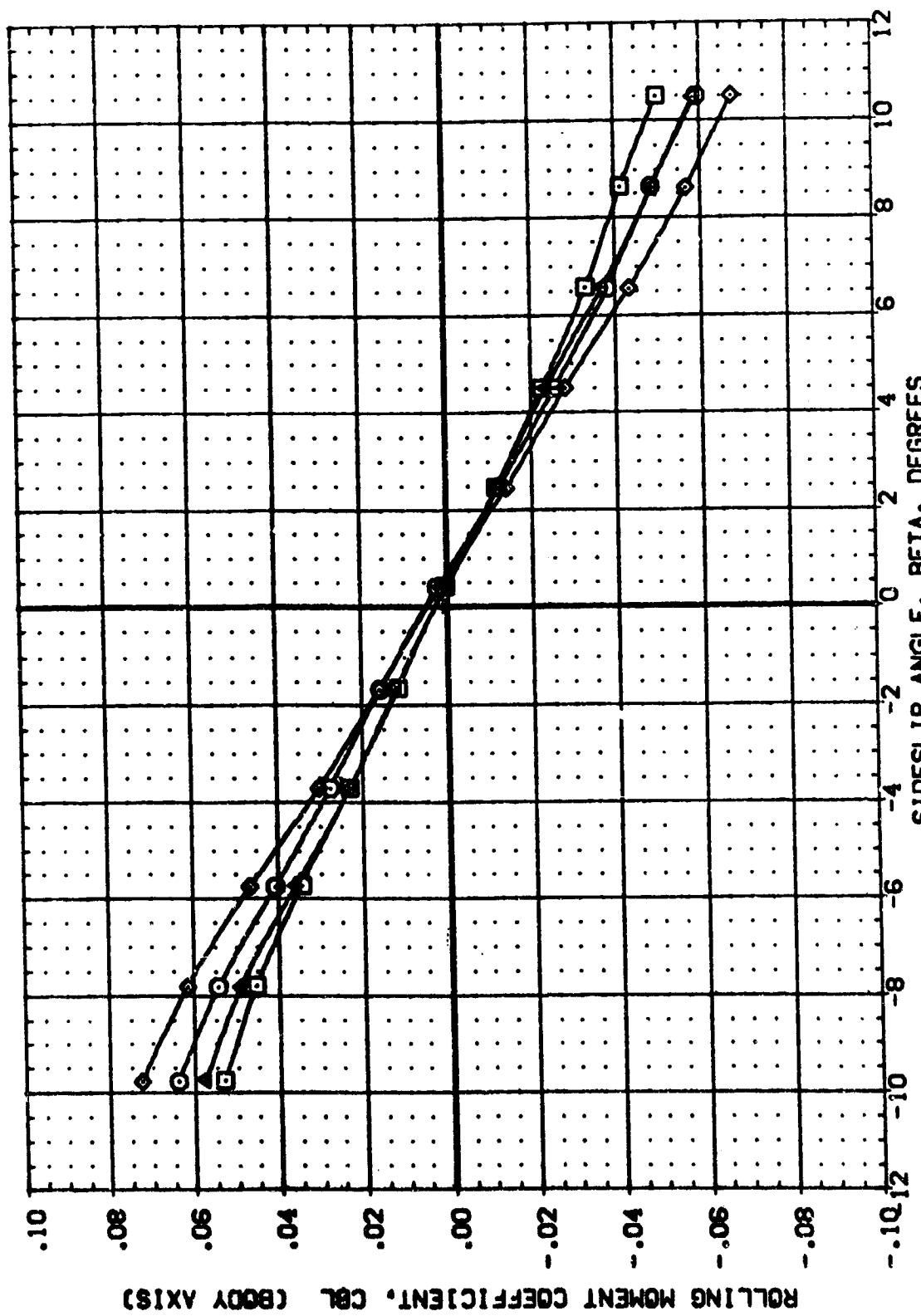
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(J)MACH = 4.96

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

ALPHA 0.000
 ORIGIN 0.000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) H5FC 575(1A37) (034)(T14)(S12)(U6)
 (888010) H5FC 575(1A37) (034)(T14)(S12)(U6)
 (888012) H5FC 575(1A37) (034)(T14)(S12)(U6)
 (888008) H5FC 575(1A37) (034)(T19)(S12)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

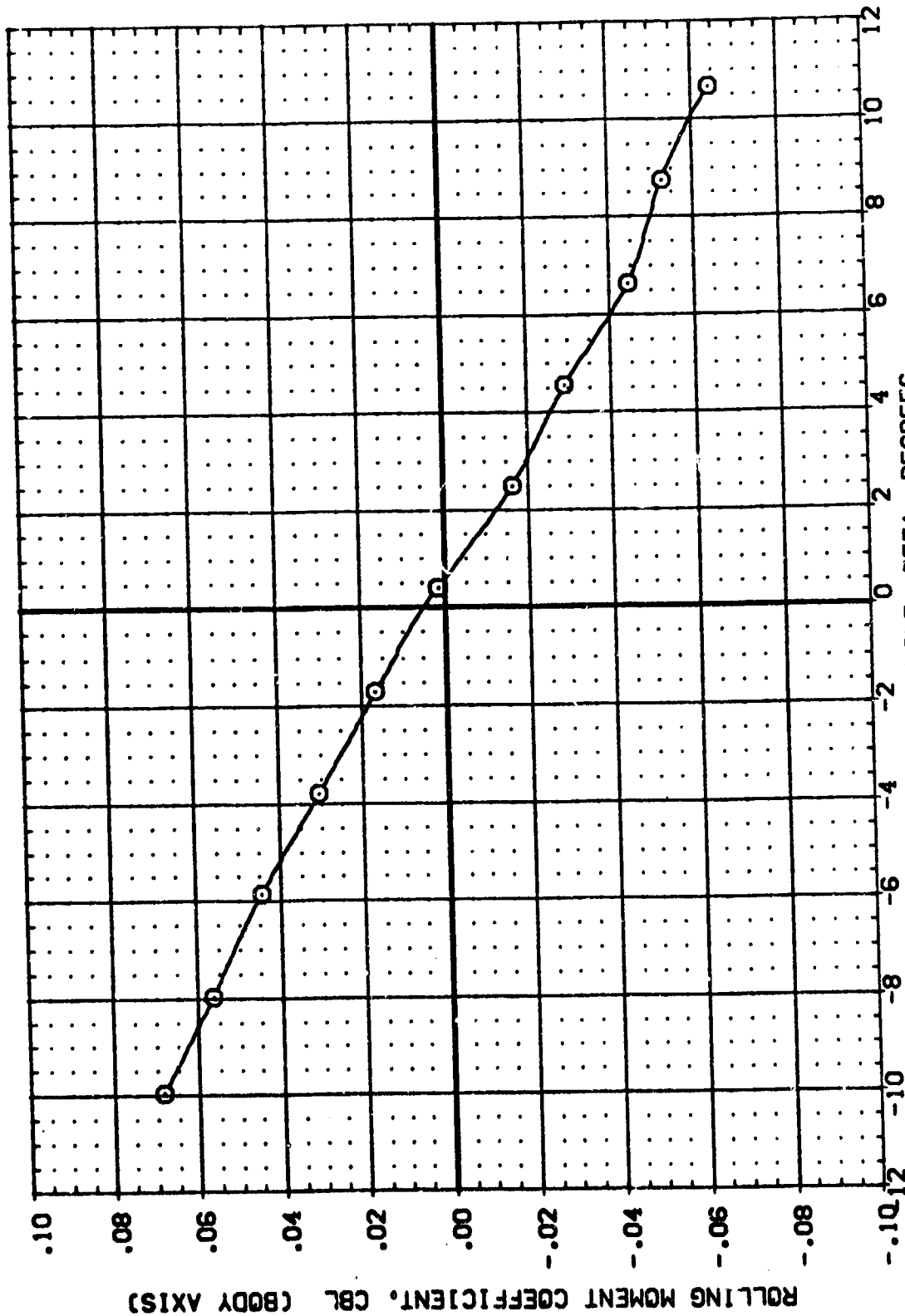
(A)MACH = .60 PAGE 100



DATA SET SYMBOL CONFIGURATION DESCRIPTION
(B86011) MSC 579(1A37) (034)(114)(S121)(U6)
(B86010) DATA NOT AVAILABLE
(B86012) DATA NOT AVAILABLE
(B86008) DATA NOT AVAILABLE

ALPHA ORBITING
0.000
-5.000
5.000
0.000

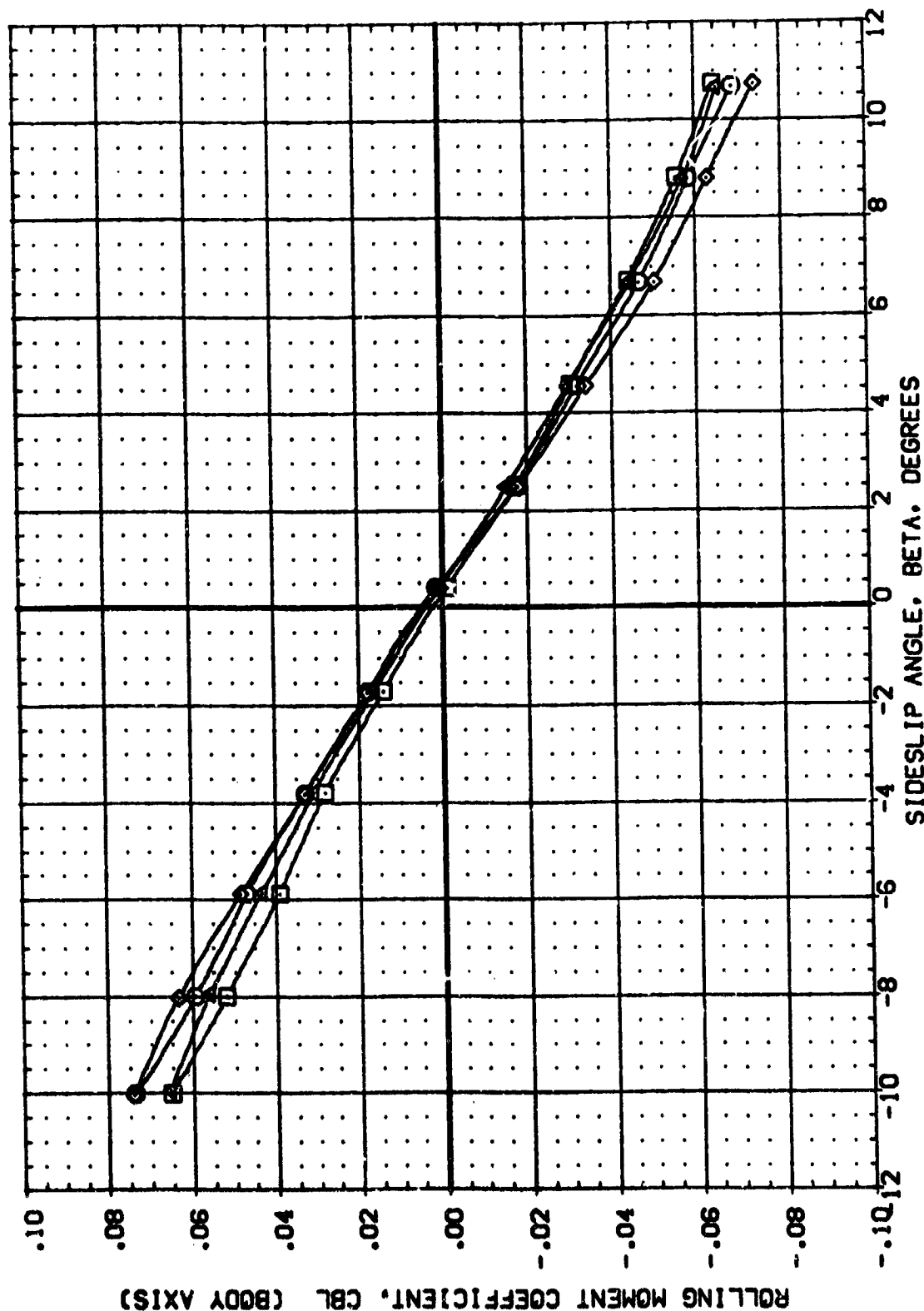
REFERENCE INFORMATION
SREF 6.1980 SQ.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 7.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



REFERENCE INFORMATION
 SREF 5.1980 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 0.000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (000011) H5-C 579(IA37) (034)(T14)(S12)(U6)
 (000010) H5-C 579(IA37) (034)(T14)(S12)(U6)
 (000012) H5-C 579(IA37) (034)(T14)(S12)(U6)
 (000008) H5-C 579(IA37) (034)(T9)(S12)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

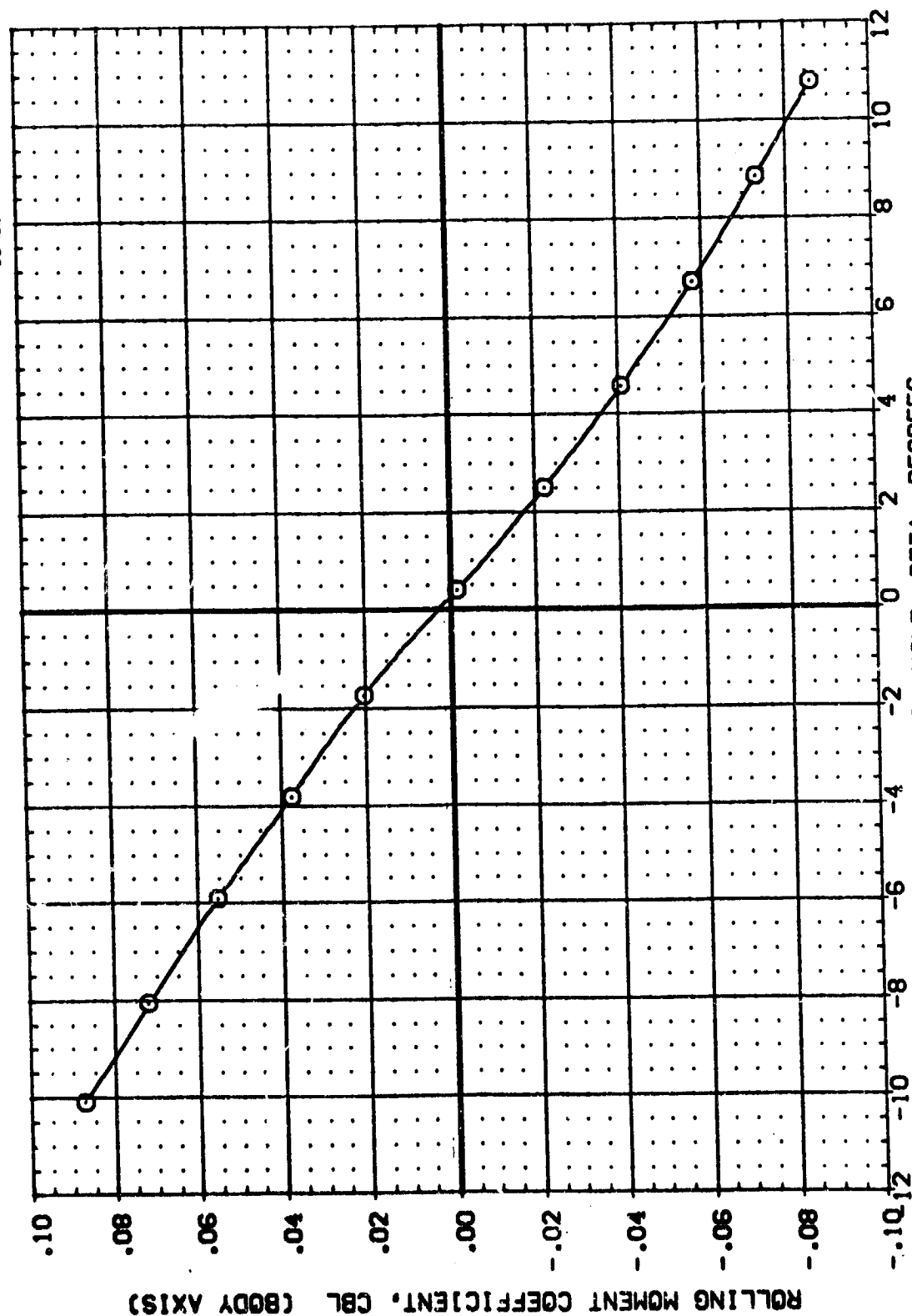
(C)MACH = .89



REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YMRP 2.7200 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 0.000
 -5.000
 5.000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSC 579(1A37) (034)(114)(512)(US)
 (888010) DATA NOT AVAILABLE
 (888012) DATA NOT AVAILABLE
 (888008) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(O)MACH = 1.00

DATA SET SYMOL. CONFIGURATION DESCRIPTION

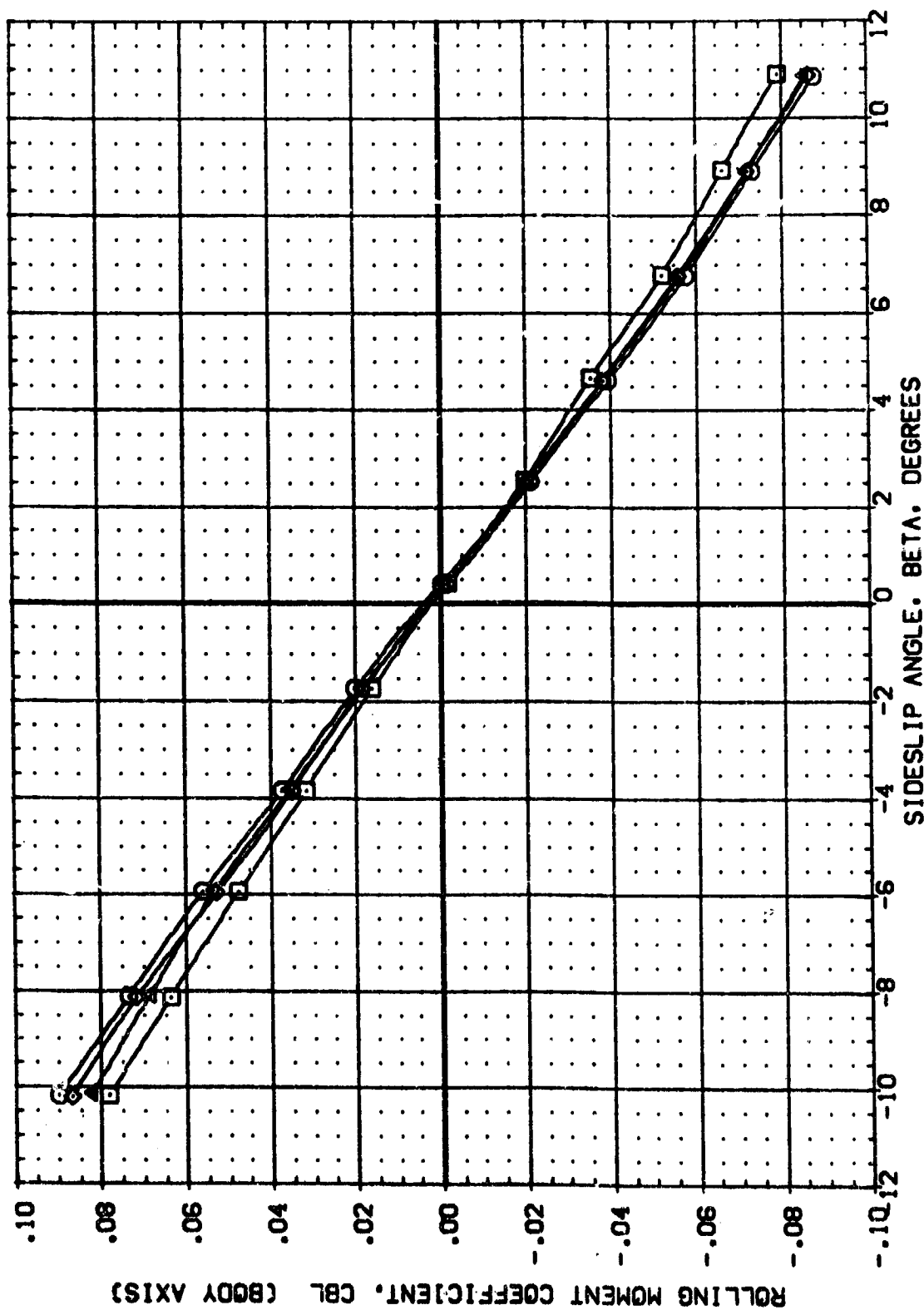
DATA SET SYMOL.	CONFIGURATION DESCRIPTION
(888011)	MSFC 579(A37) (034)(114)(5)(2)(US)
(888010)	MSFC 579(A37) (034)(114)(5)(2)(US)
(888012)	MSFC 579(A37) (034)(114)(5)(2)(US)
(888008)	MSFC 579(A37) (034)(114)(5)(2)(US)

ALPHA ORBINC

ALPHA	ORBINC
0.000	0.000
5.000	0.000
5.000	0.000

REFERENCE INFORMATION

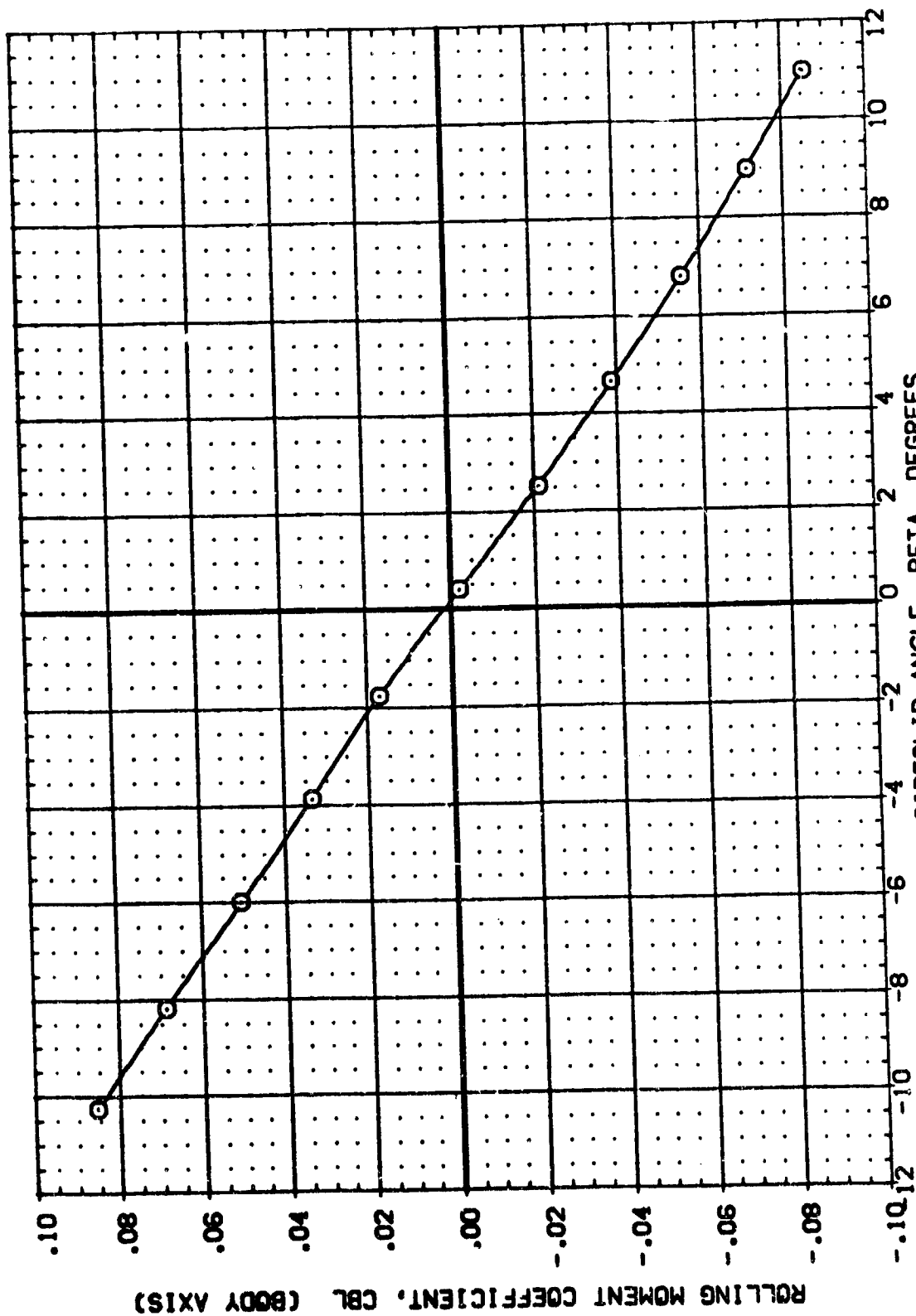
REFERENCE INFORMATION	SCALE
SREF	6.1980
LREF	5.1600
BREF	5.1600
XPRP	2.7200
YPRP	0.0000
ZPRP	0.0000
SCALE	0.0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(E)MACH = 1.10

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
{ 44-011 }	MSC STS(1,27) (034)(T14)(S12)(U6)
{ 44-010 }	DATA NOT AVAILABLE
{ 44-012 }	DATA NOT AVAILABLE
{ 44-008 }	DATA NOT AVAILABLE

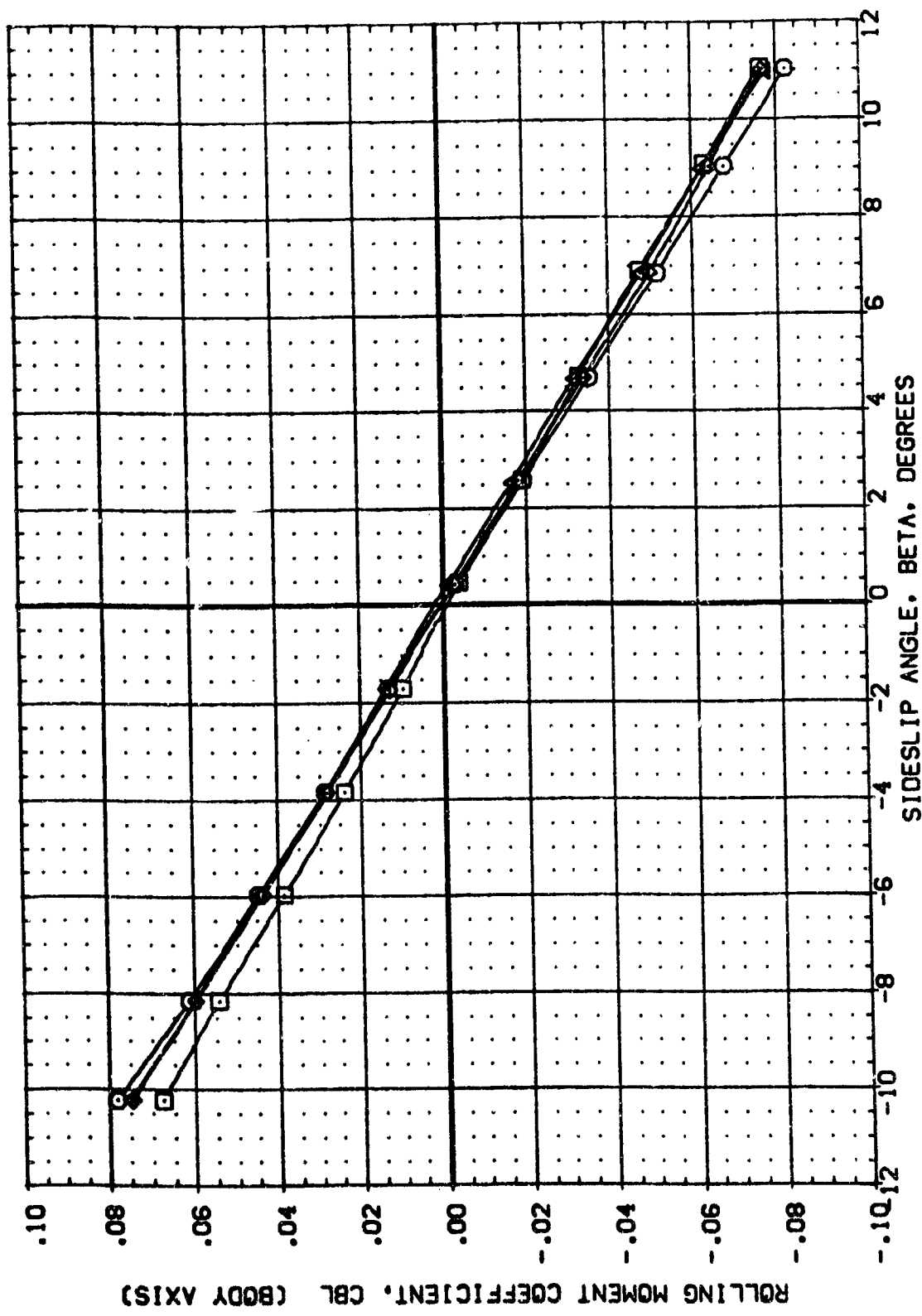


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

$$(F)_{MACH} = 1.20$$

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBITAL	REFERENCE INFORMATION
(888011)	MSFC 579(A37) (034)(T14)(S12)(U6)	.000	.000	SREF 6.1980 IN.
(888010)	MSFC 579(A37) (034)(T14)(S12)(U6)	-5.000	.000	LREF 5.1600 IN.
(888012)	MSFC 579(A37) (034)(T14)(S12)(U6)	5.000	.000	BREF 5.1600 IN.
(888008)	MSFC 579(A37) (034)(T14)(S12)(U6)	.000	.000	XREF 2.7200 IN.
				YREF .0000 IN.
				ZREF .0000 IN.
				SCALE .0010



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (G)MACH = 1.46
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DATA SET SYMBOL CONFIGURATION DESCRIPTION

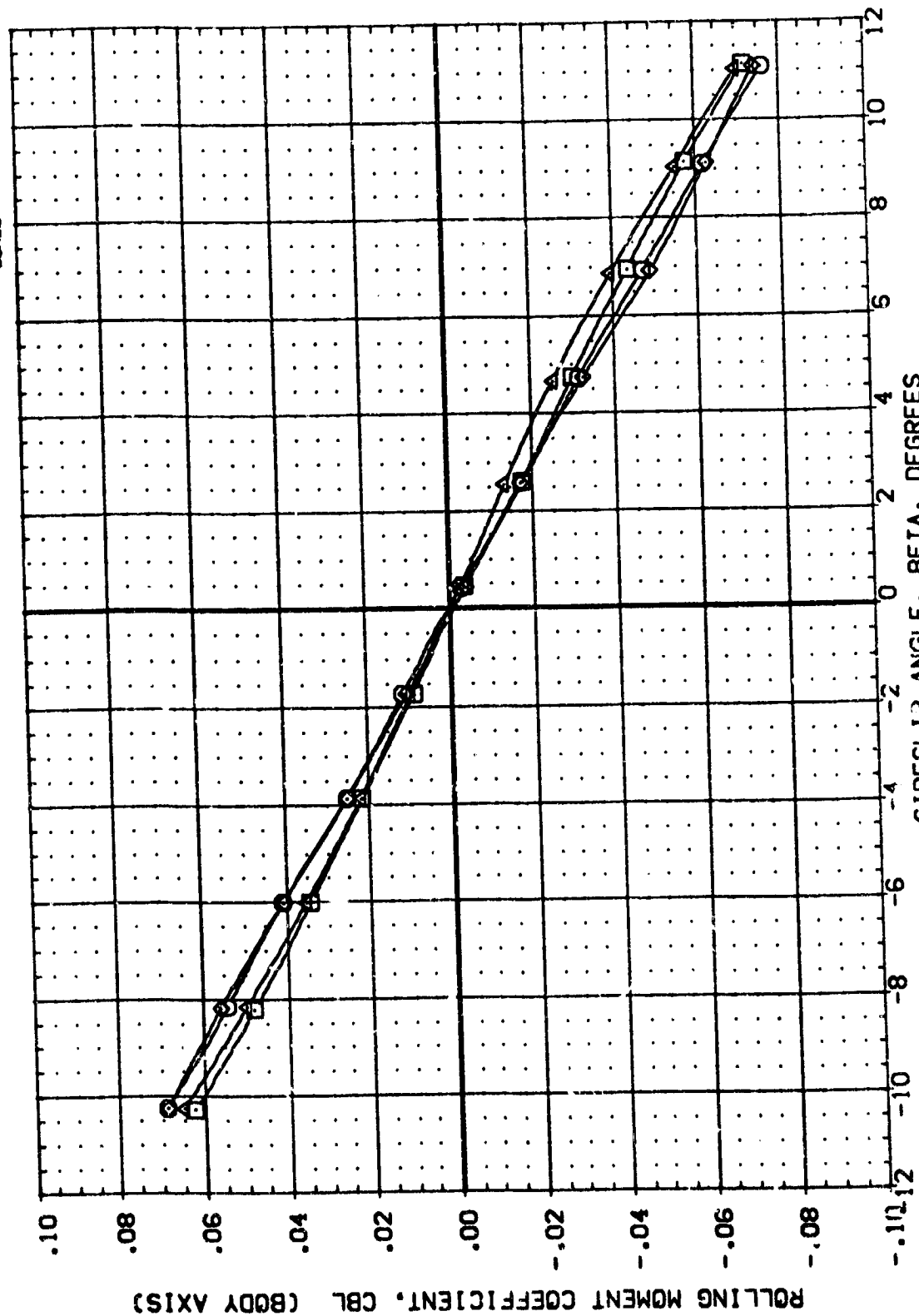
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(B88011)	MSFC 579(A37) (034)(T14)(S12)(US)
(B88010)	MSFC 579(A37) (034)(T14)(S12)(US)
(B88012)	MSFC 579(A37) (034)(T14)(S12)(US)
(B8800E)	MSFC 579(A37) (034)(T19)(S12)

ALPHA ORBING

ALPHA	ORBING
.000	.000
-5.000	.000
5.000	.000

REFERENCE INFORMATION

REFERENCE INFORMATION	VALUE	UNIT
SREF	6.1980	IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XPRP	2.7200	IN.
YPRP	.0000	IN.
ZPRP	.0000	IN.
SCALE	.0040	

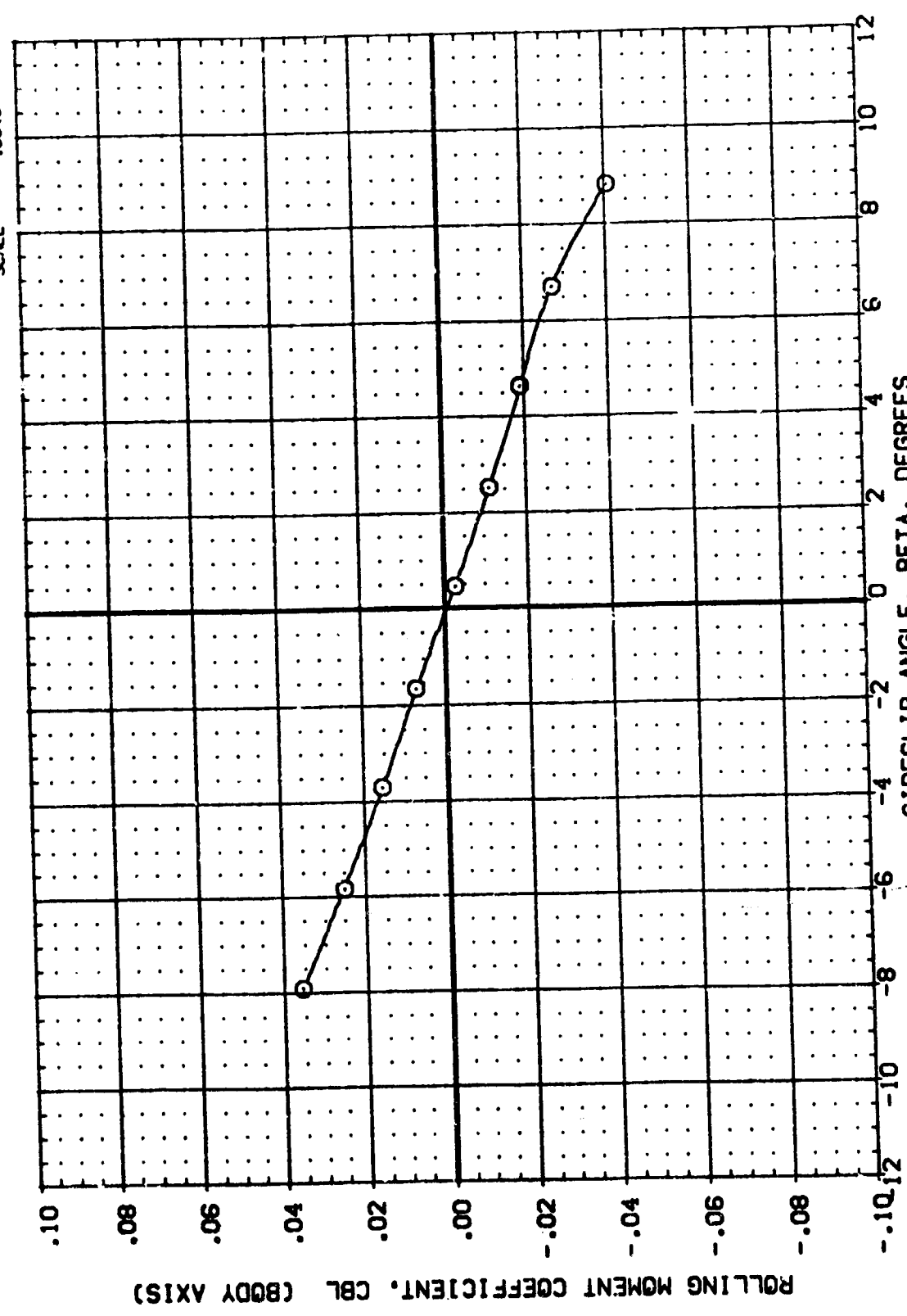


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

ALPHA 0.000
 CRINC 0.000
 -5.000
 5.000
 .000

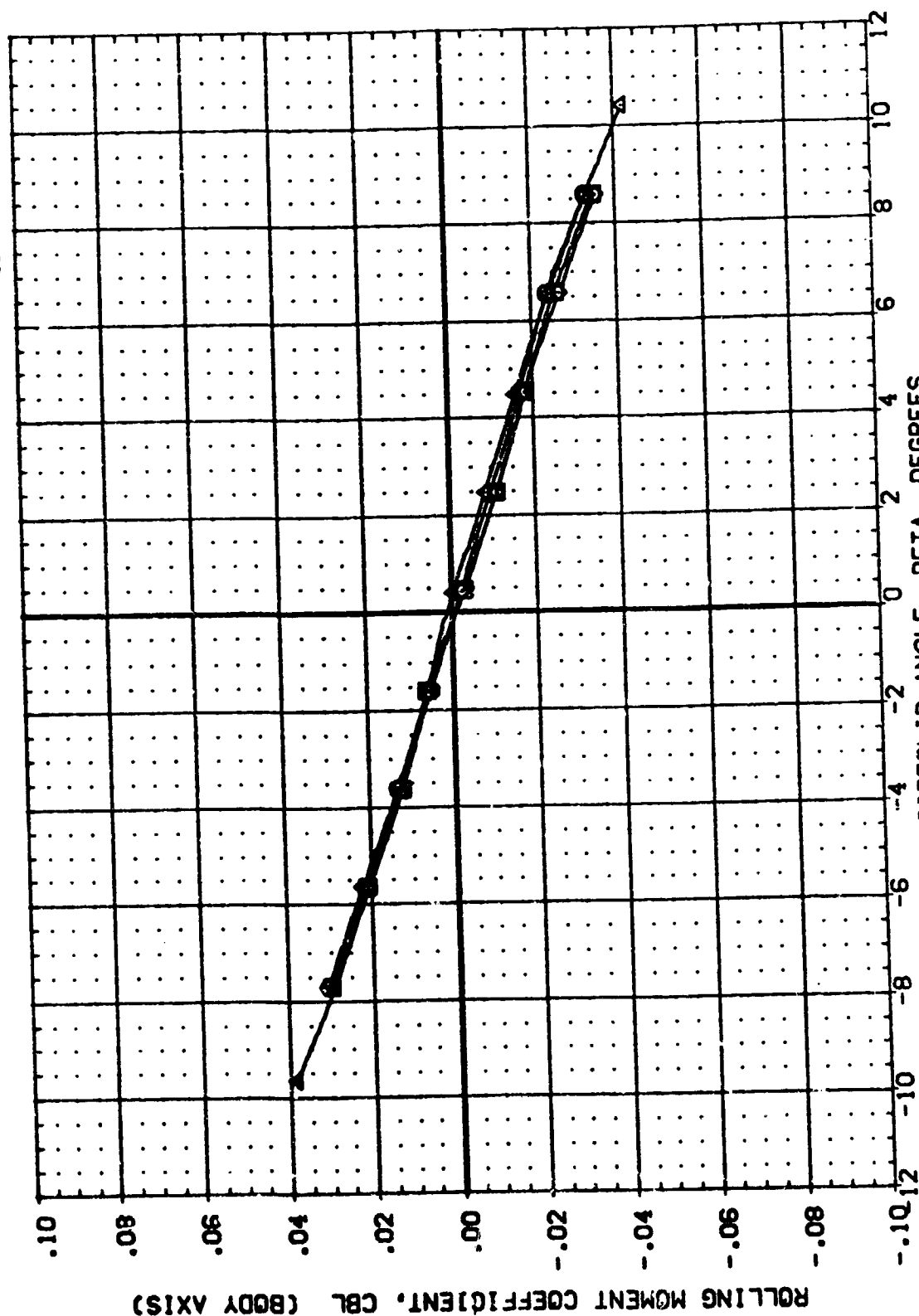
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) PSFC 579(1A37) (034)(114)(S'2)(U6)
 (E'8010) DATA NOT AVAILABLE
 (B88012) DATA NOT AVAILABLE
 (B88008) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(1)MACH = 3.48

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
[886011]	HFC 579 (A37) (034) (114) (S12) (US)
[886010]	HFC 579 (A37) (034) (114) (S12) (US)
[88C12]	HFC 579 (A37) (034) (114) (S12) (US)
[886009]	HFC 579 (A37) (034) (119) (S12)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (FIRST STAGE)

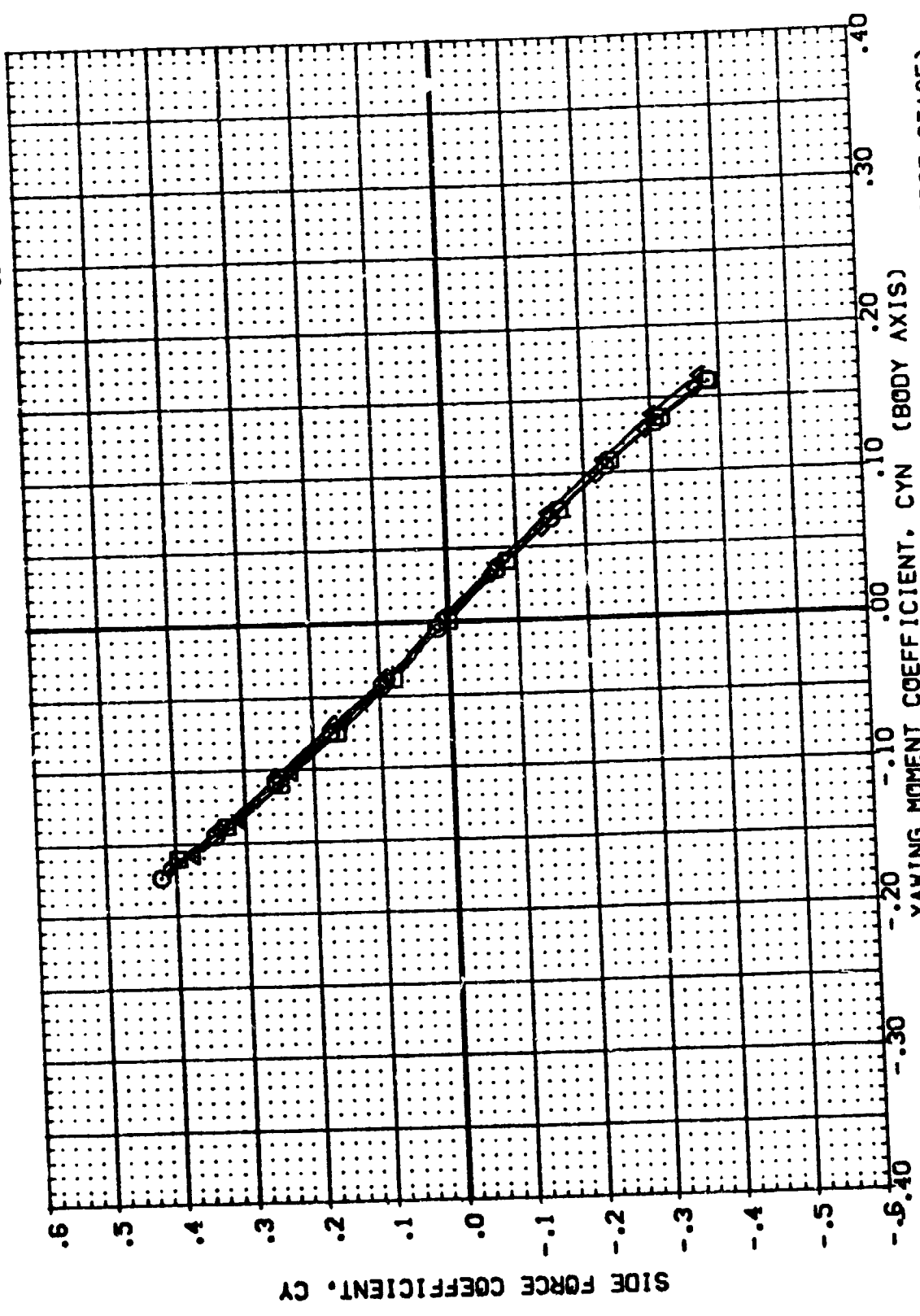
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CJ)MACH = 4.96

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 N.
 BREF 5.1600 N.
 XREF 2.7200 N.
 YREF .0000 N.
 ZREF .0000 N.
 SCALE .0040

ALPHA 0.000
 ORBINC .000
 .000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) H5C 579(1A37) (034)(114)(S12)(U6)
 (888010) H5C 579(1A37) (034)(114)(S12)(U6)
 (888012) H5C 579(1A37) (034)(114)(S12)(U6)
 (888008) H5C 579(1A37) (034)(114)(S12)(U6)



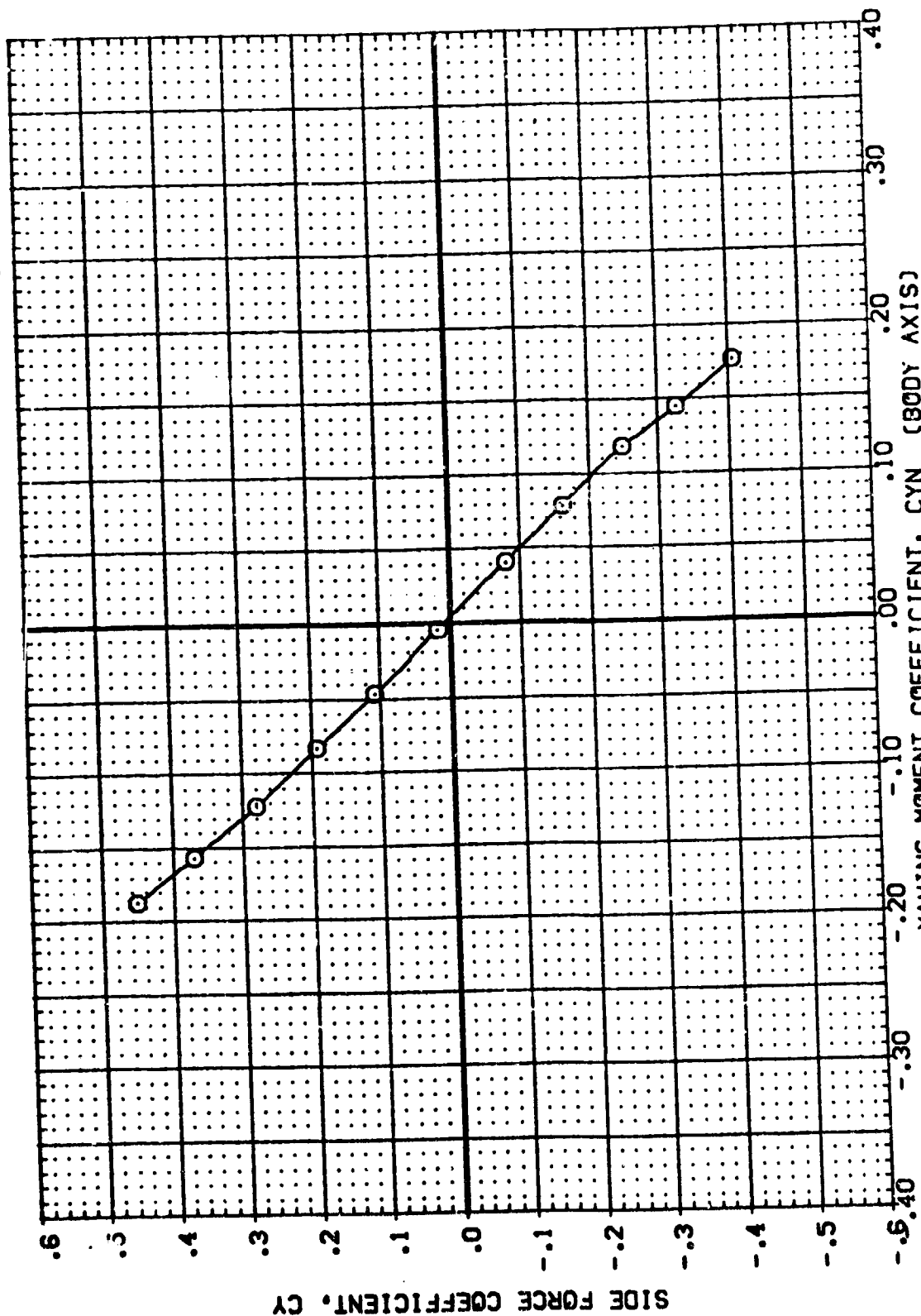
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (A)MACH = .60
 PAGE 110



REFERENCE INFORMATION
SREF 5.1980 SQ. IN.
LREF 5.1600
BREF 5.1600
XPRP 2.7200
YPRP .0000
ZPRP .0000
SCALE .0040

ALPHA ORBING
.000
-5.000
5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(B88011) HSEC 579(A37) (034)(T14)(S12)(U6)
(B88010) DATA NOT AVAILABLE
(B88012) DATA NOT AVAILABLE
(B88008) DATA NOT AVAILABLE



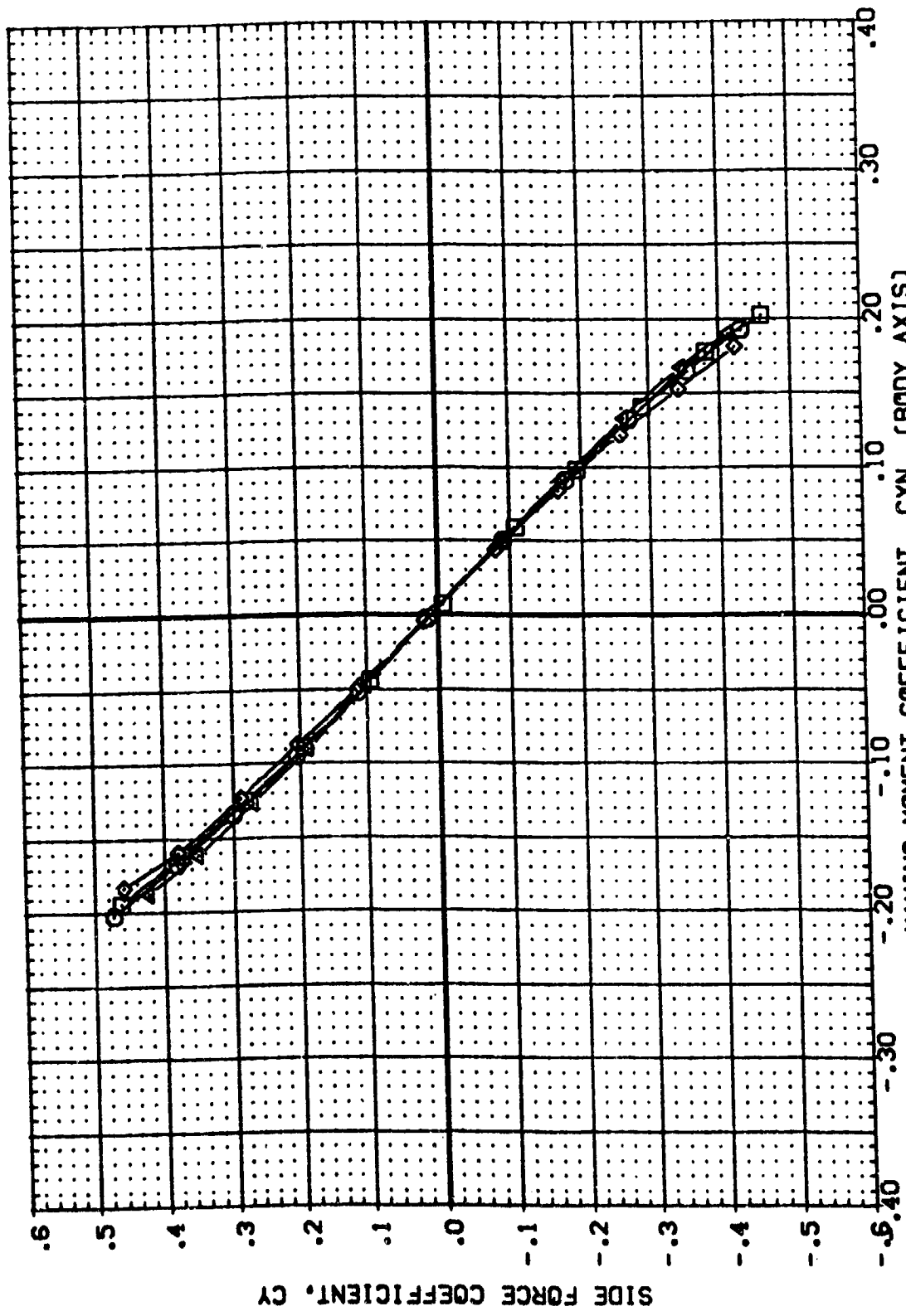
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(B)MACH = .80

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 YMRP 2.7200 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000
 .000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSFC 579(A37) (034)(114)(S12)(US)
 (888010) MSFC 579(A37) (034)(114)(S12)(US)
 (888012) MSFC 579(A37) (034)(114)(S12)(US)
 (888008) MSFC 579(A37) (034)(119)(S12)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

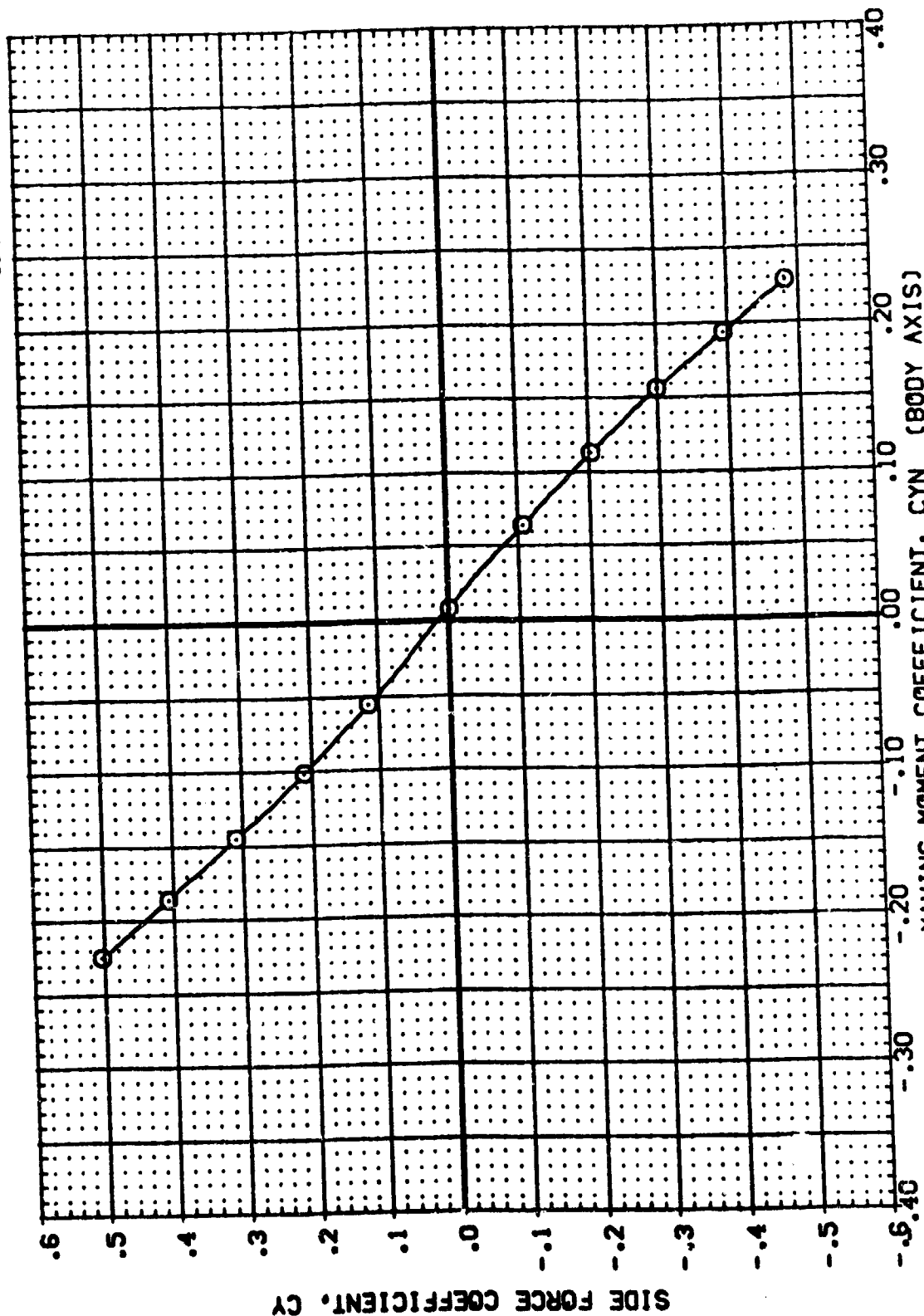
(CJ)MACH = .89



REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 0.000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (880011) MSFC 5791 (A37) (034)(114)(S12)(US)
 (880010) DATA NOT AVAILABLE
 (880012) DATA NOT AVAILABLE
 (880008) DATA NOT AVAILABLE



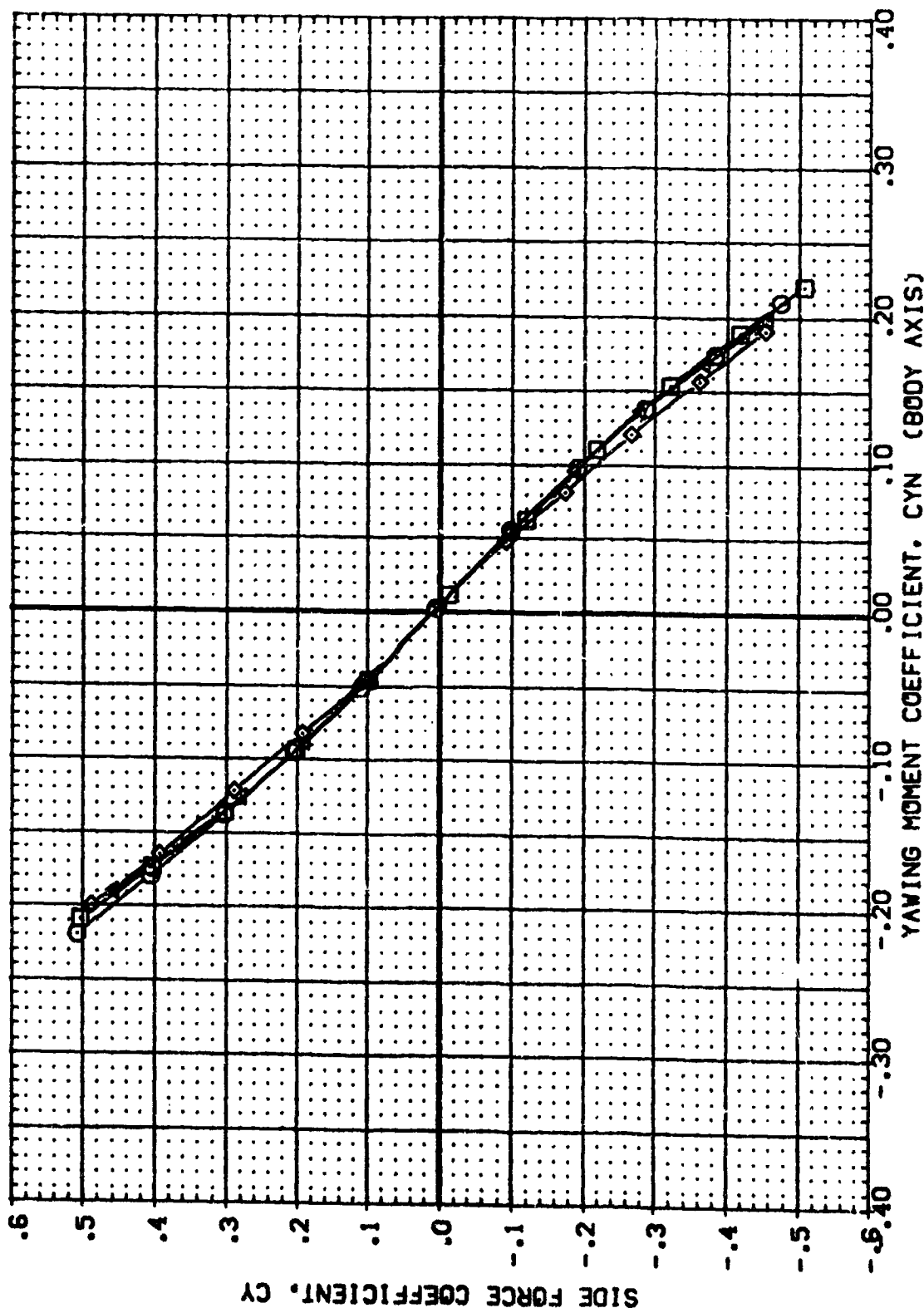
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(O)MACH = 1.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B86011) MSC 579(1A37) (034)(114)(S12)(US)
 (B86010) MSC 579(1A37) (034)(114)(S12)(US)
 (B86012) MSC 579(1A37) (034)(114)(S12)(US)
 (B86008) MSC 579(1A37) (034)(114)(S12)

ALPHA OMBING
 .000 .000
 -5.000 .000
 5.000 .000

REFERENCE INFORMATION
 SREF 6.1800 SQ.IN.
 LREF 5.1800 IN.
 BREF 5.1800 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

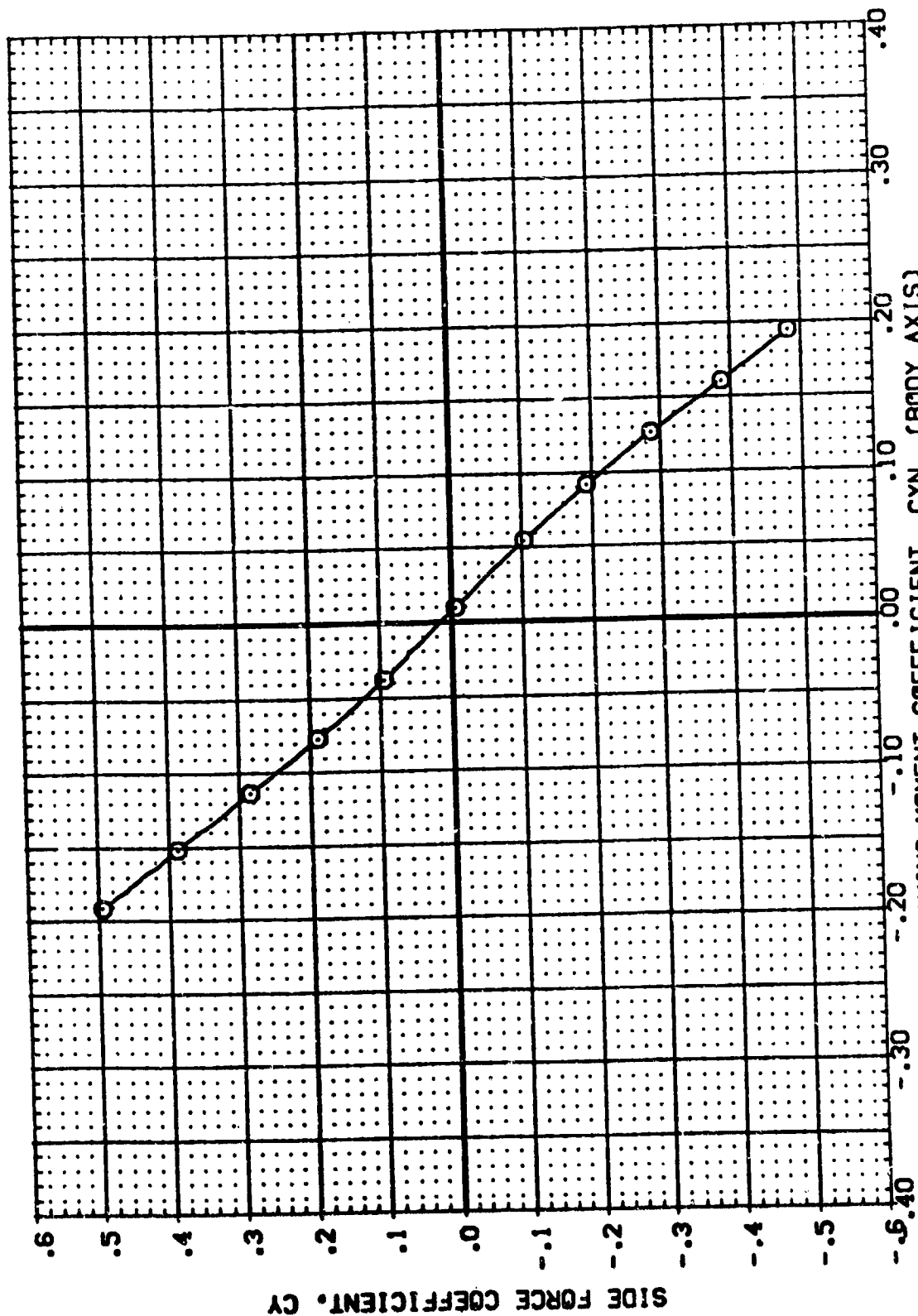
(E)MACH = 1.10



REFERENCE INFORMATION
SREF 6.1980 50. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XREF 2.7200 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .0040

ALPHA ORBING
0.000
-5.000
5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(888011) MSFC 579(1A37) (034)(T14)(S12)(US)
(888010) DATA NOT AVAILABLE
(888012) DATA NOT AVAILABLE
(888008) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(F)MACH = 1.20

DATA SET SYMBOL CONFIGURATION DESCRIPTION

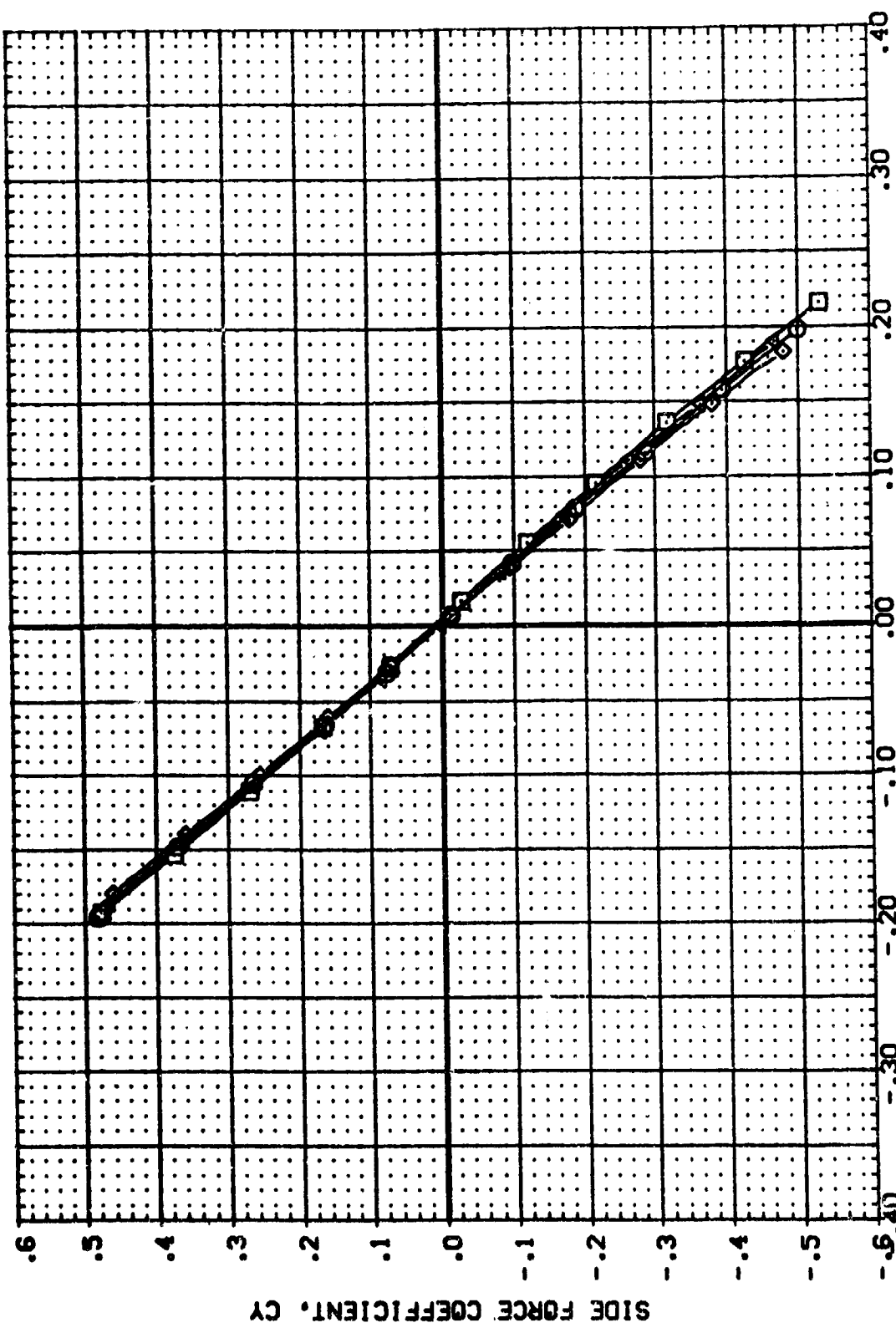
[000011] [004] [T14] [S12] (U6)
 [000010] [004] [T14] [S12] (U6)
 [000012] [004] [T14] [S12] (U6)
 [000008] [004] [T9] [S12]

MSFC 579 (A37)
 MSFC 579 (A37)
 MSFC 579 (A37)

ALPHA 0.000
 -5.000
 5.000

ORIGIN 0.000
 0.000
 0.000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP 0.0000 IN.
 ZPRP 0.0000 IN.
 SCALE 0.0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

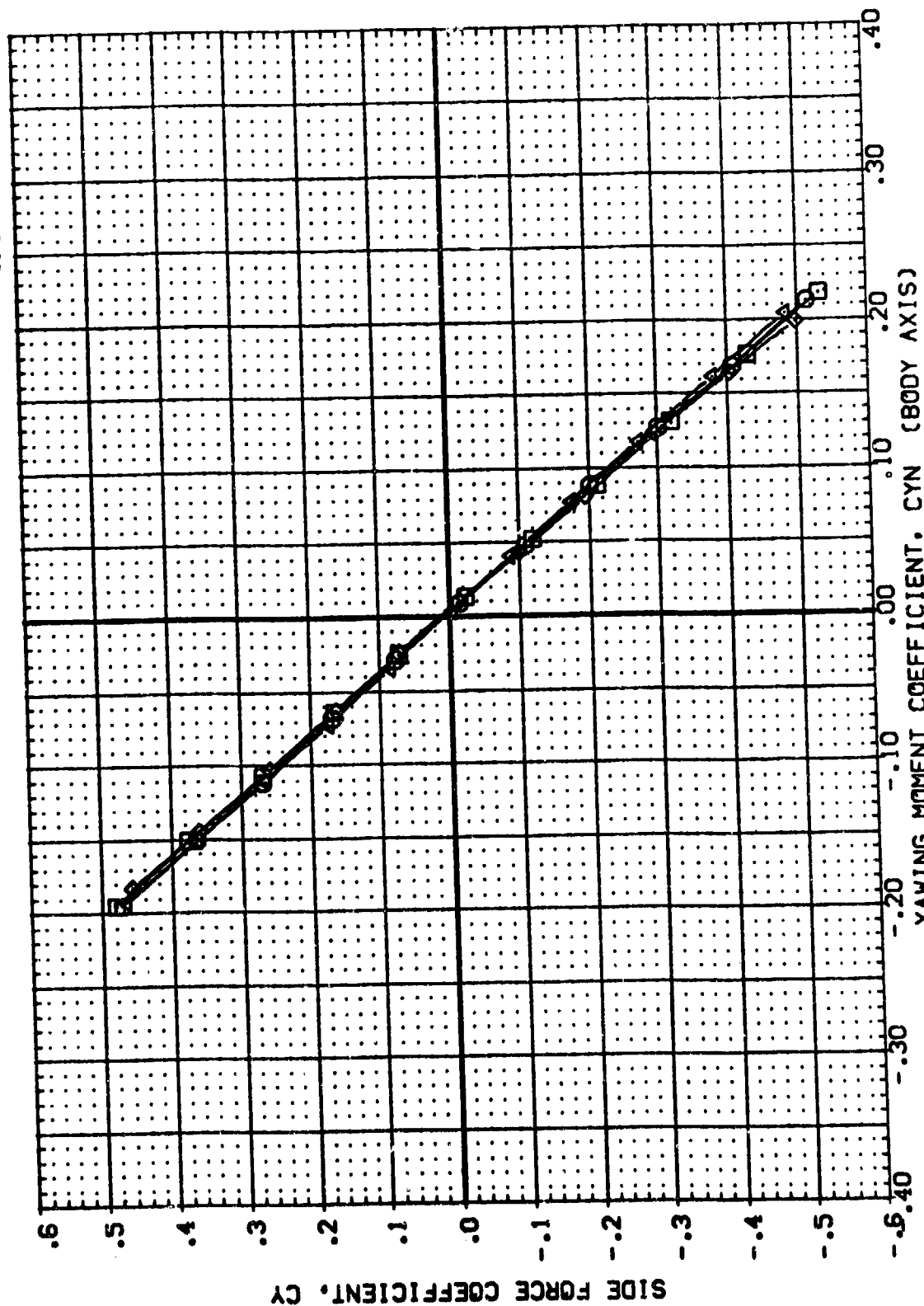
(G)MACH = 1.46

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REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YHFP 2.7200 IN.
 ZHFP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000
 -5.000
 5.000
 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (B88011) MSFC 573(A37) (034)(114)(S12)(US)
 (B88010) MSFC 573(A37) (034)(114)(S12)(US)
 (B88012) MSFC 573(A37) (034)(114)(S12)(US)
 (B88008) MSFC 573(A37) (034)(114)(S12)(US)

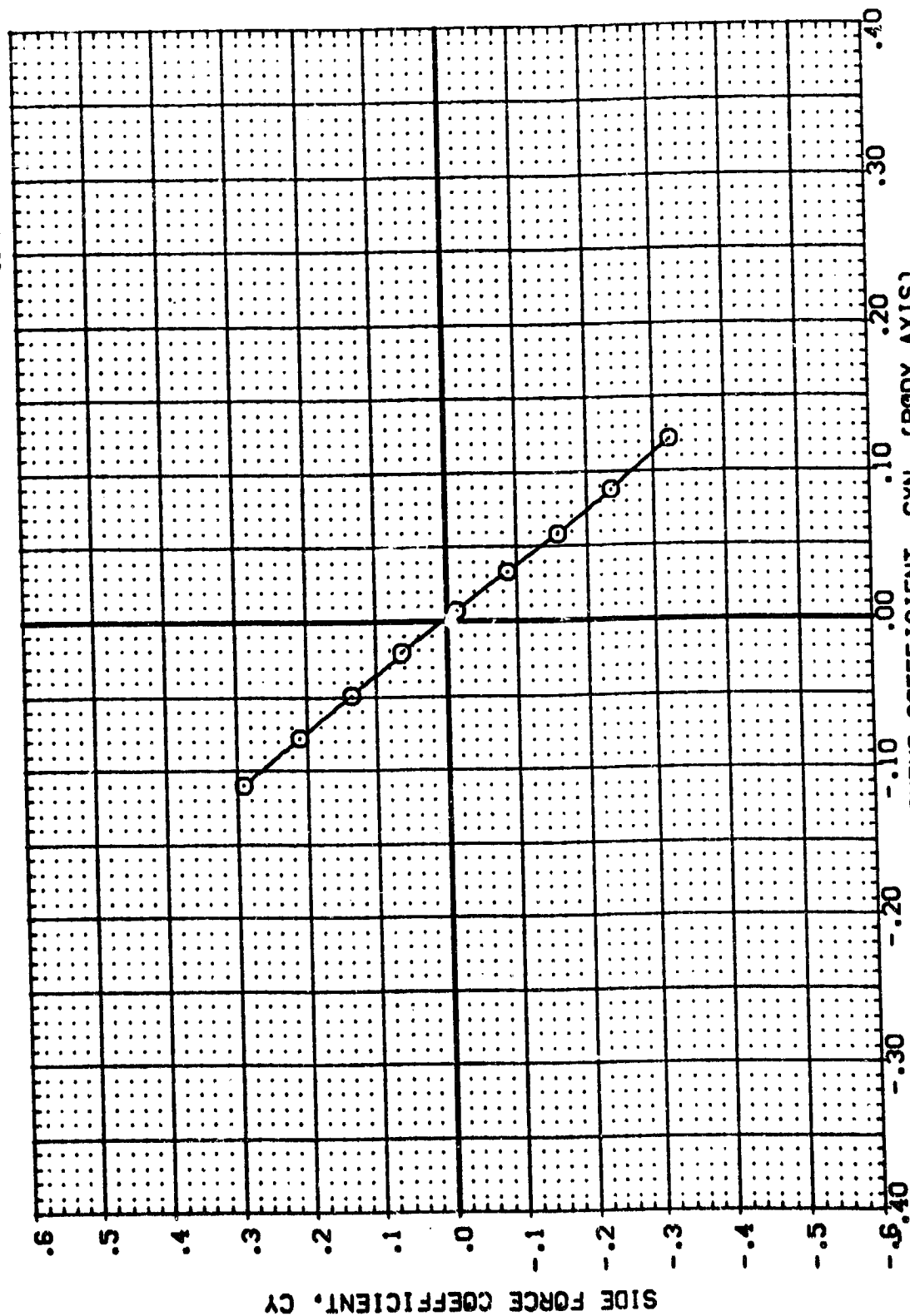


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

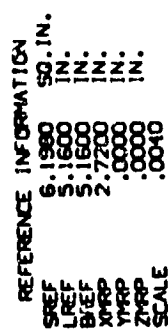
REFERENCE INFORMATION
 SREF 6.1960 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000 .000
 -5.000 .000
 5.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) MSC 579(1A37) (004)(T14)(S12)(U6)
 (B88010) DATA NOT AVAILABLE
 (B88012) DATA NOT AVAILABLE
 (B88008) DATA NOT AVAILABLE

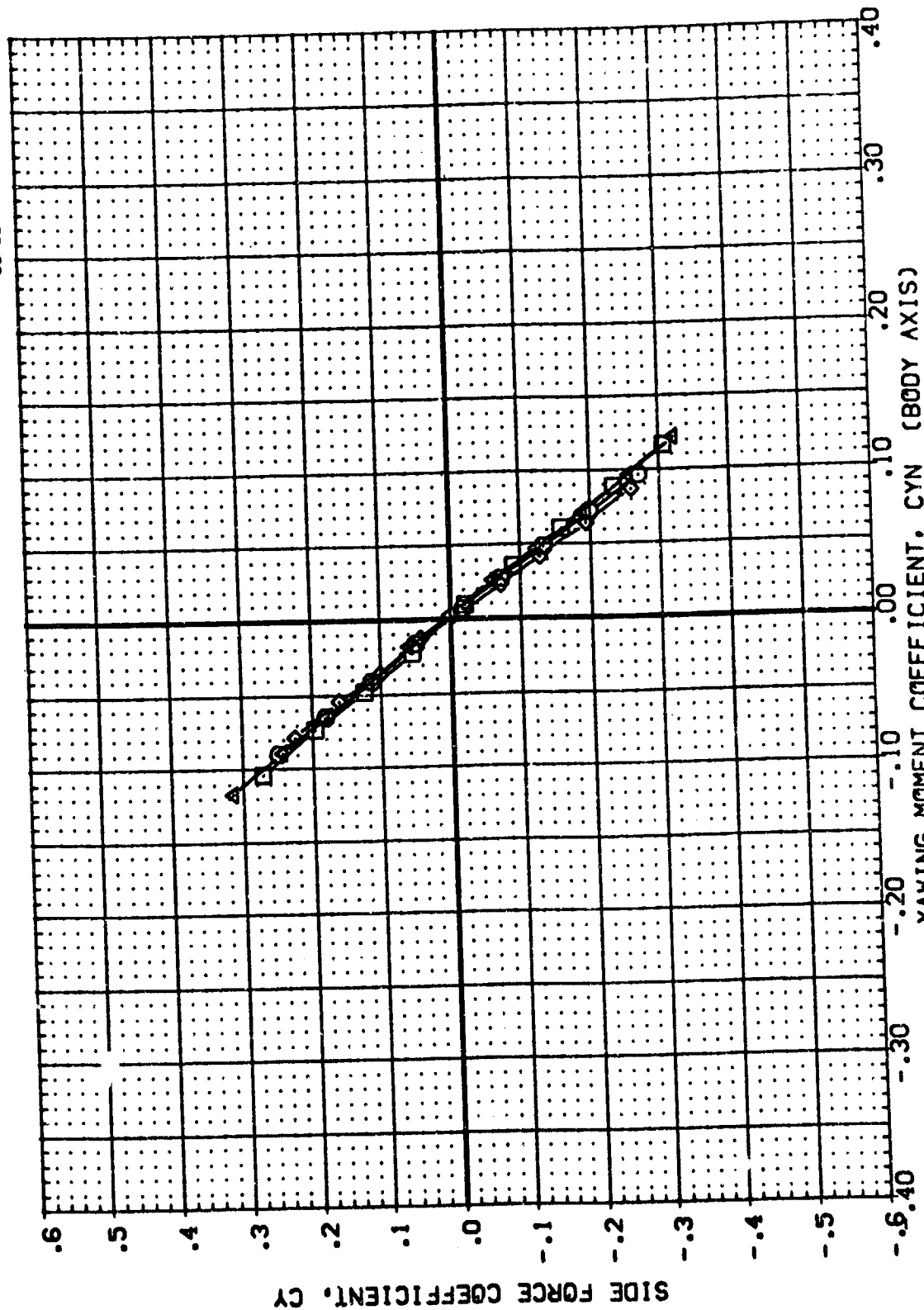


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)



ALPHA	0.000	0.000
	-5.000	0.000
	5.000	0.000
	0.000	0.000

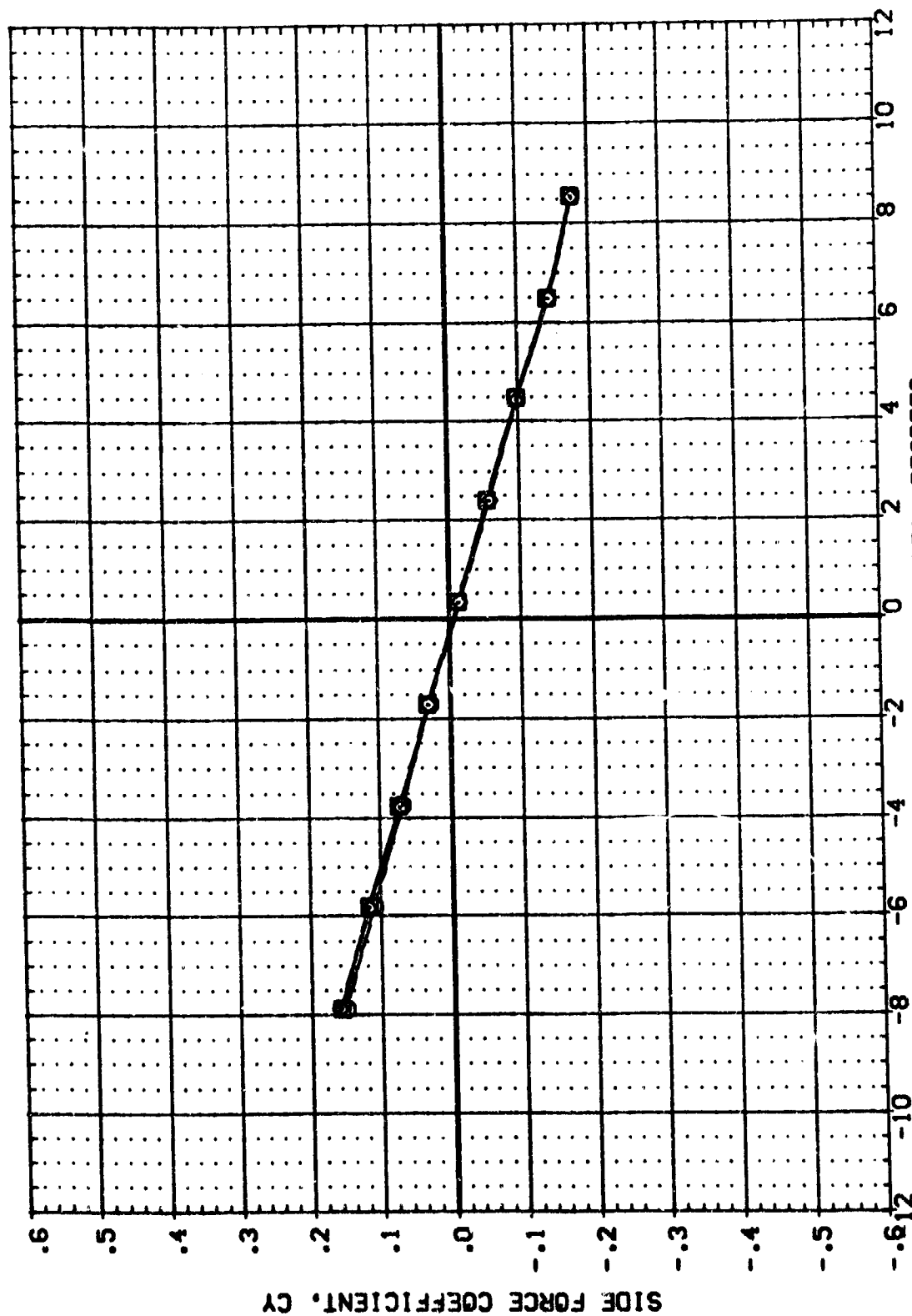
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(B86011)	H5FC 579 (A37)	(034)(114)(S12)(U6)
(B86010)	H5FC 579 (A37)	(034)(114)(S12)(U6)
(B86012)	H5FC 579 (A37)	(034)(114)(S12)(U6)
(B86008)	H5FC 579 (A37)	(034)(19)(S12)



REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885005) MSFC 580(1A48) (034)(T9)(S12)
 (885003) MSFC 580(1A48) (034)(T14)(S12)
 (885002) MSFC 580(1A48) (034)(T14)(S12)(US)



SIDESLIP ANGLE, BETA, DEGREES

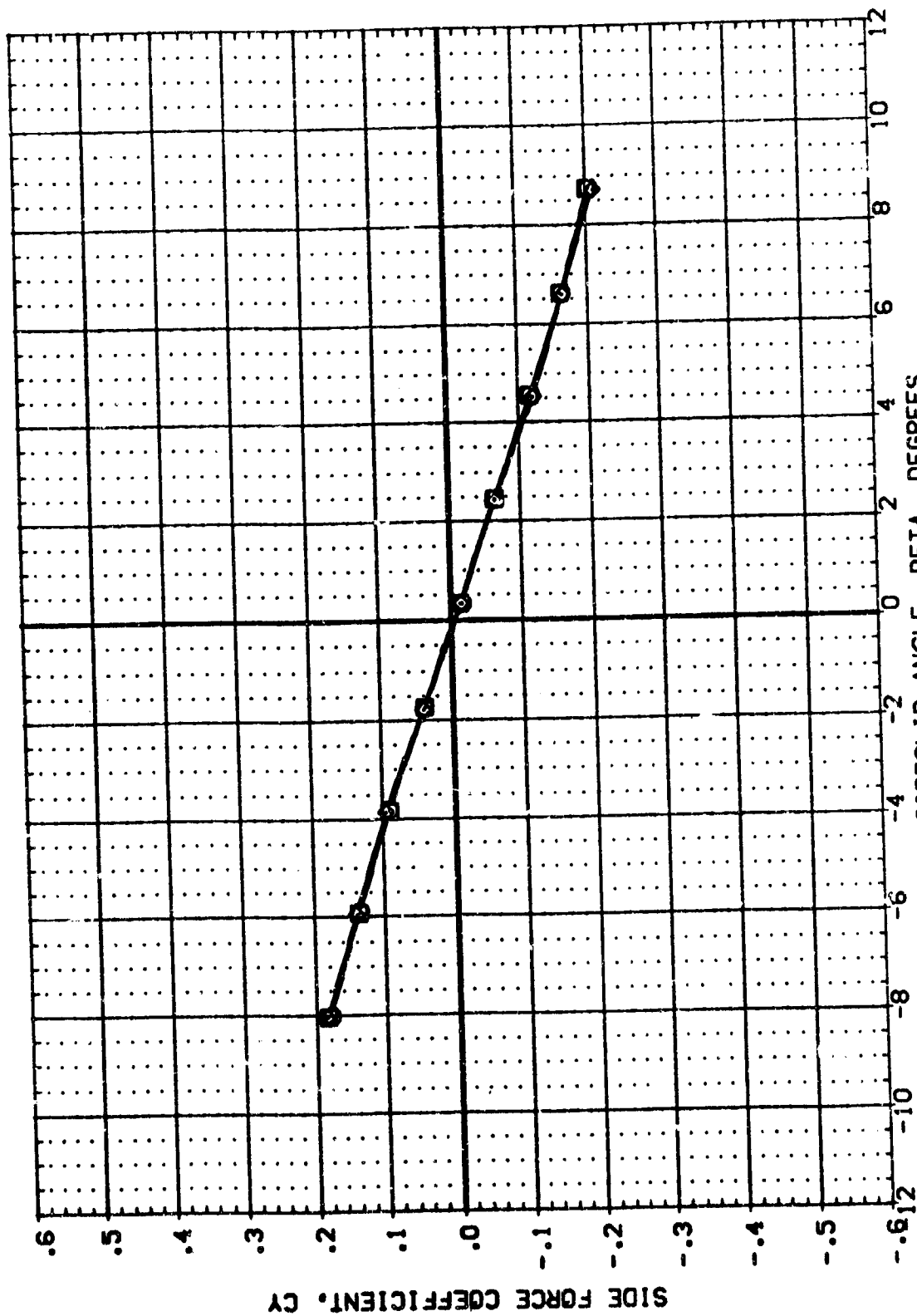
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(A)MACH = .60



DATA SET SYMBOL CONFIGURATION DESCRIPTION ALPHA ORBING REFERENCE INFORMATION

(885005)	HSFC 580(I48) (034)(T9)(S12)	.000	.000	SREF 5.1980	50. IN.
(885006)	HSFC 580(I48) (034)(T14)(S12)	.000	.000	LREF 5.1600	IN.
(885007)	HSFC 580(I48) (034)(T14)(S12)	.000	.000	BREF 5.1600	IN.
(885008)	HSFC 580(I48) (034)(T14)(S12)(U6)	.000	.000	XPRP 2.7200	IN.
				YPRP .0000	IN.
				ZPRP .0000	IN.
				SCALE .0040	



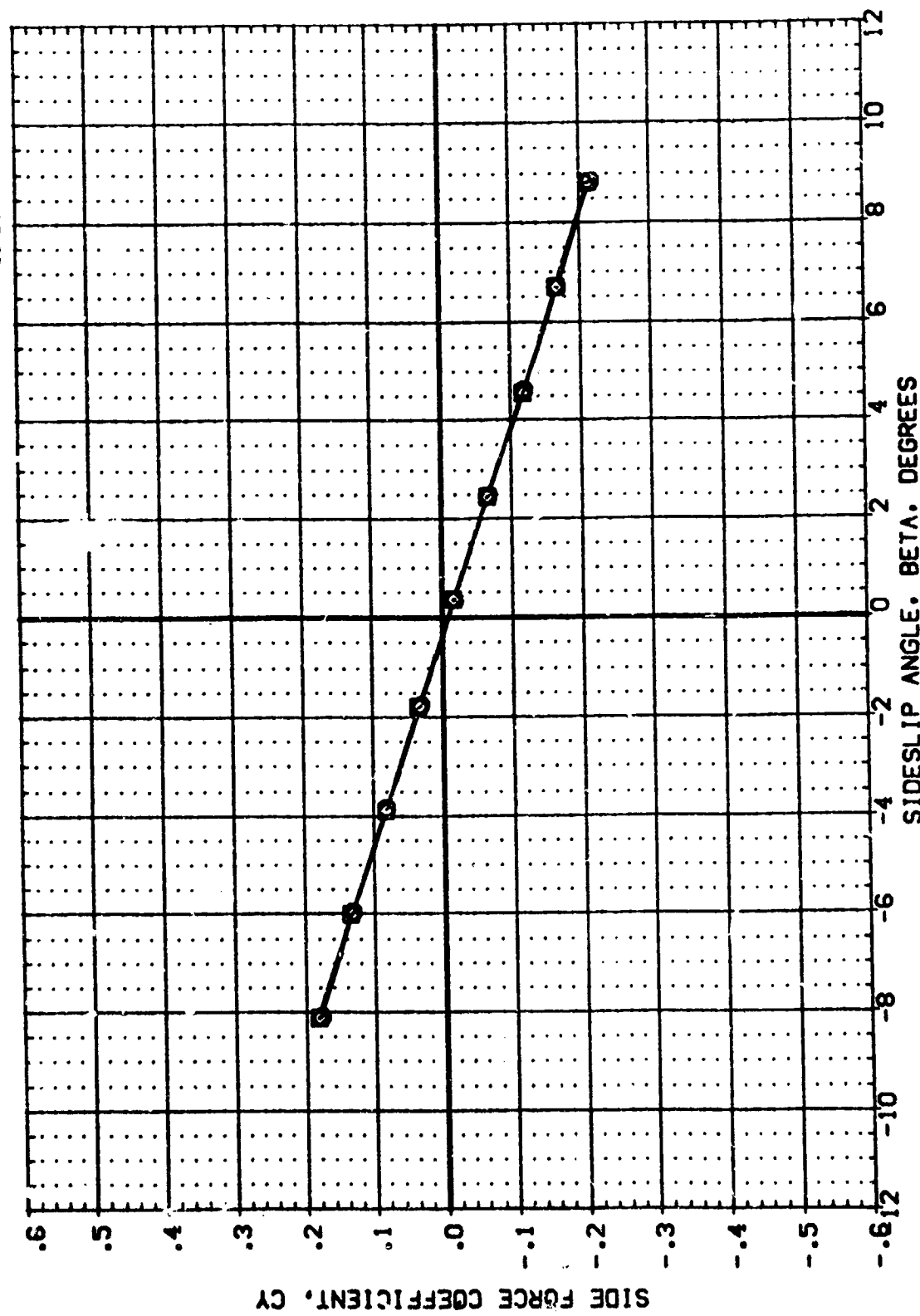
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)

(B)MACH = .90

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89006) H5FC 560(I48) (034)(T9)(S12)
 (B89003) H5FC 560(I48) (034)(T14)(S12)
 (B89002) H5FC 560(I48) (034)(T14)(S12)(U6)



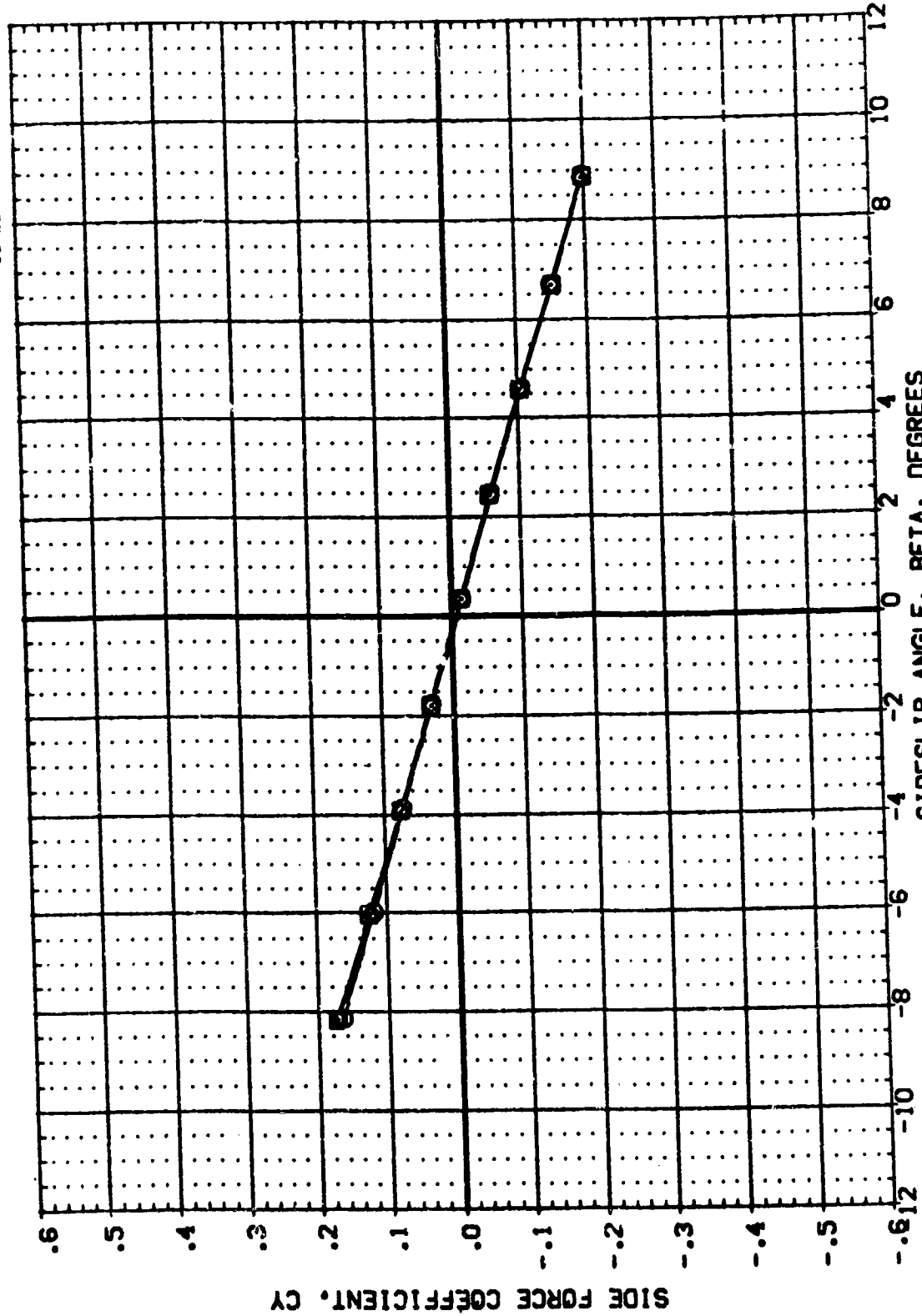
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(C)MACH = 1.10

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1200 IN.
 BREF 5.1800 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0010

ALPHA ORBINC
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B85005) HSFC 580(IA48) (C04)(T9)(S12)
 (B85003) HSFC 580(IA48) (C04)(T14)(S12)
 (B85002) HSFC 580(IA48) (C04)(T14)(S12)(US)



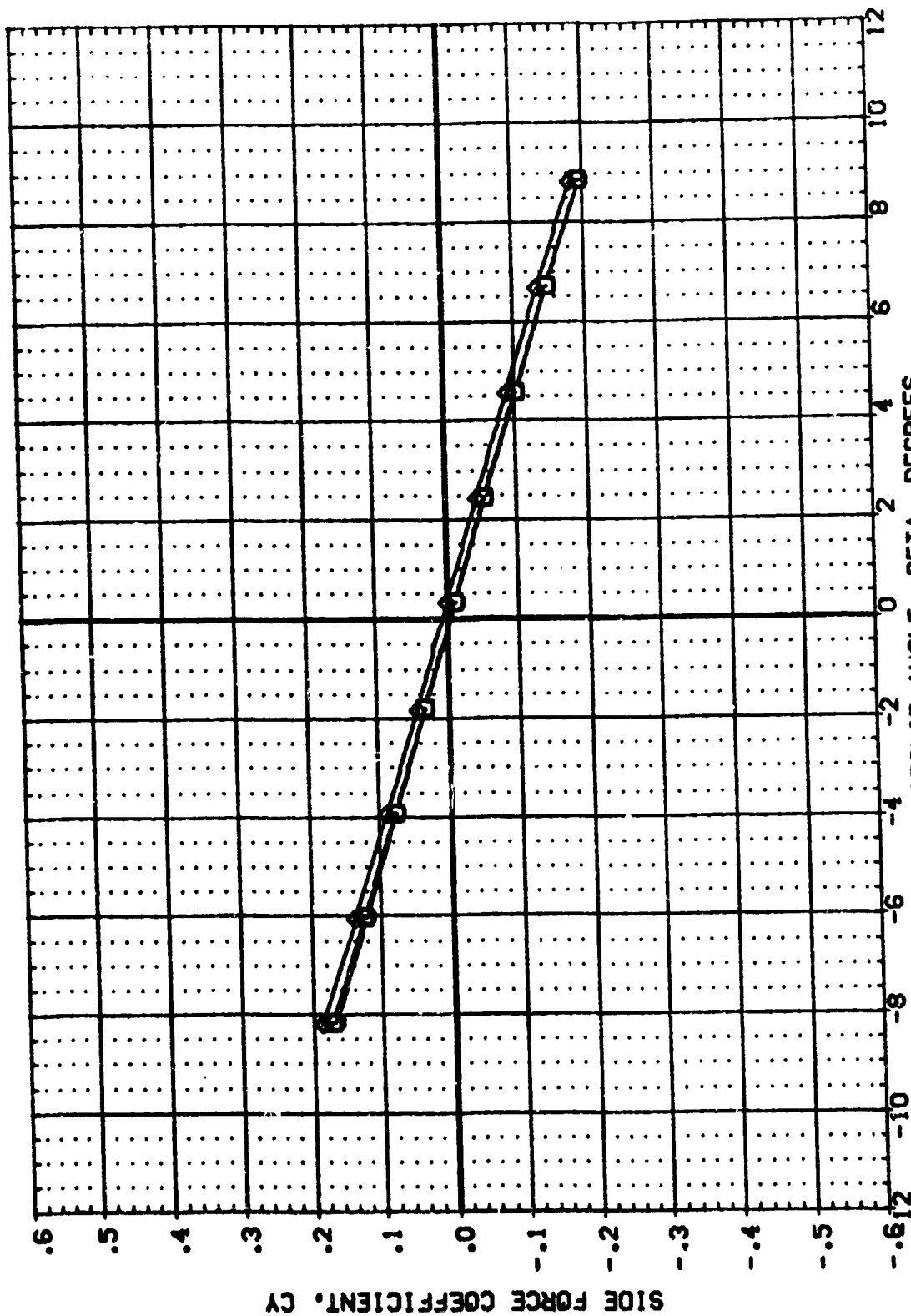
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(O)MACH = 1.25

REFERENCE INFORMATION
 SREF 6.1500 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885008) HPFC 580(1A48) (034)(79)(512)
 (885009) HPFC 580(1A48) (034)(114)(512)
 (885010) HPFC 580(1A48) (034)(114)(512)(U6)



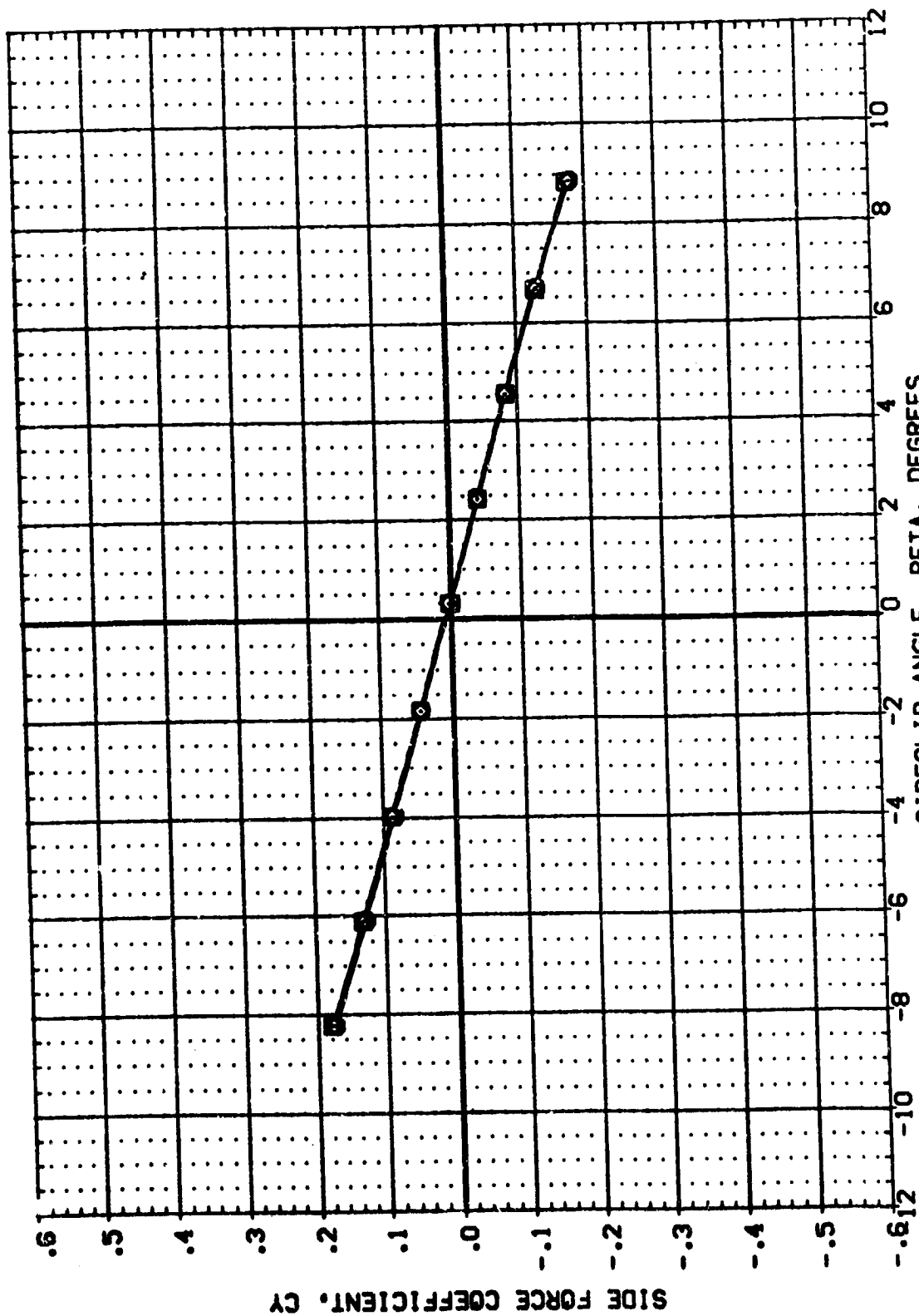
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACTERISTICS (ORBITER ONLY)



DATA SET SYMBOL CONFIGURATION DESCRIPTION
(885006) MSFC 580(A48) (034)(T9)(S12)
(885007) MSFC 580(A48) (034)(T14)(S12)
(885008) MSFC 580(A48) (034)(T14)(S12)(U6)

ALPHA ORBINC
.000
.000
.000

REFERENCE INFORMATION
SREF 6.1980 SQ.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XREF 2.7200 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .0010



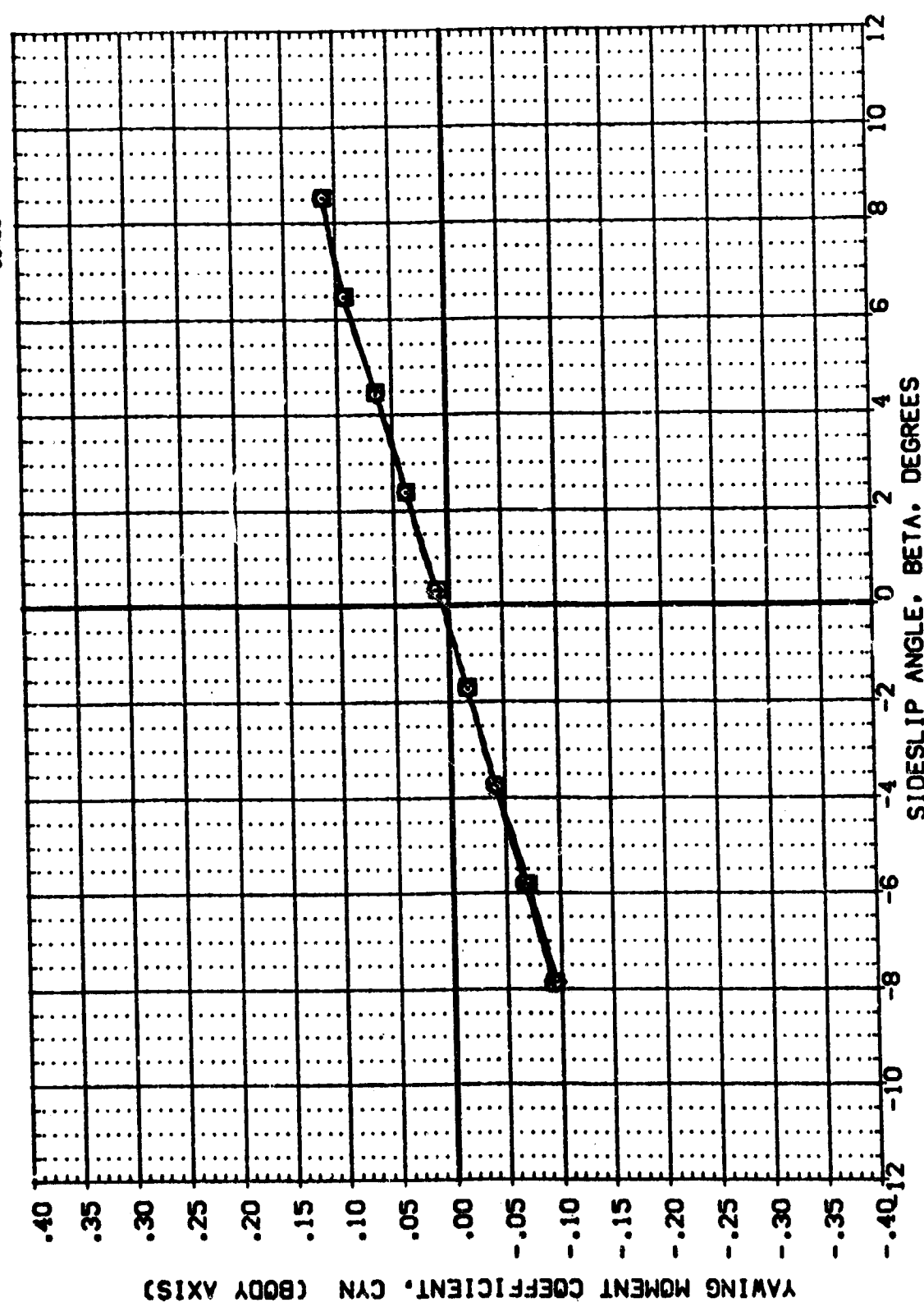
SIDESLIP ANGLE, BETA, DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 ORBINC 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) MSFC 580(1A48) (034)(T9)(S12)
 (B89003) MSFC 580(1A48) (034)(T14)(S12)
 (B89002) MSFC 580(1A48) (034)(T14)(S12)(U6)

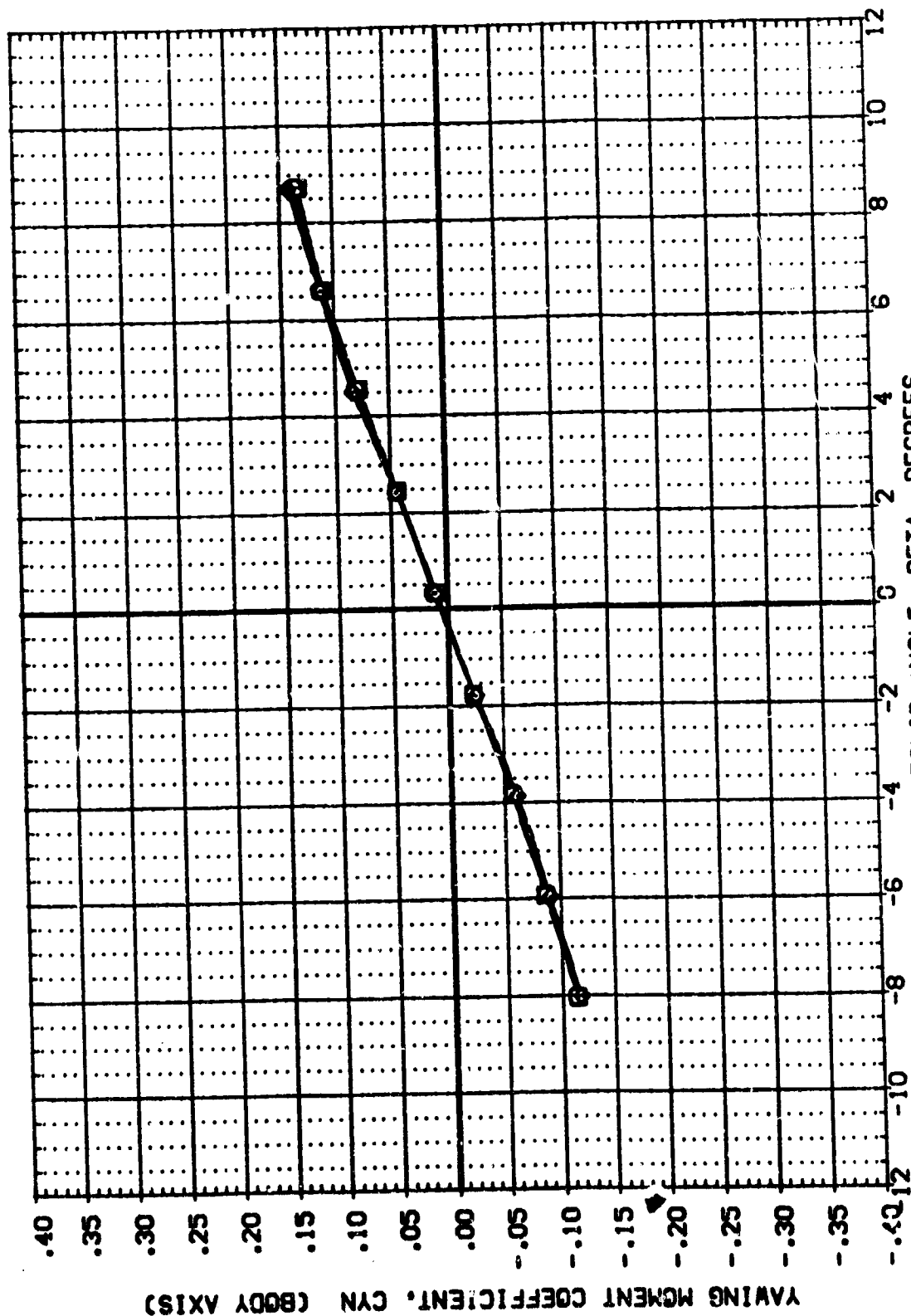


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)
 (A)MACH = .60
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DATA SET SYMBOL CONFIGURATION DESCRIPTION ALPHA ORBINC REFERENCE INFORMATION

(888006)	HSTC 580(1A48) (034)(T9)(S12)	.000	.000	SREF 6.1980 IN.
(888003)	HSTC 580(1A48) (034)(T14)(S12)	.000	.000	LREF 5.1600 IN.
(888002)	HSTC 580(1A48) (034)(T14)(S12)(US)	.000	.000	BREF 5.1600 IN.
				XMRP 2.7200 IN.
				YMRP .0000 IN.
				ZMRP .0000 IN.
				SCALE .0010



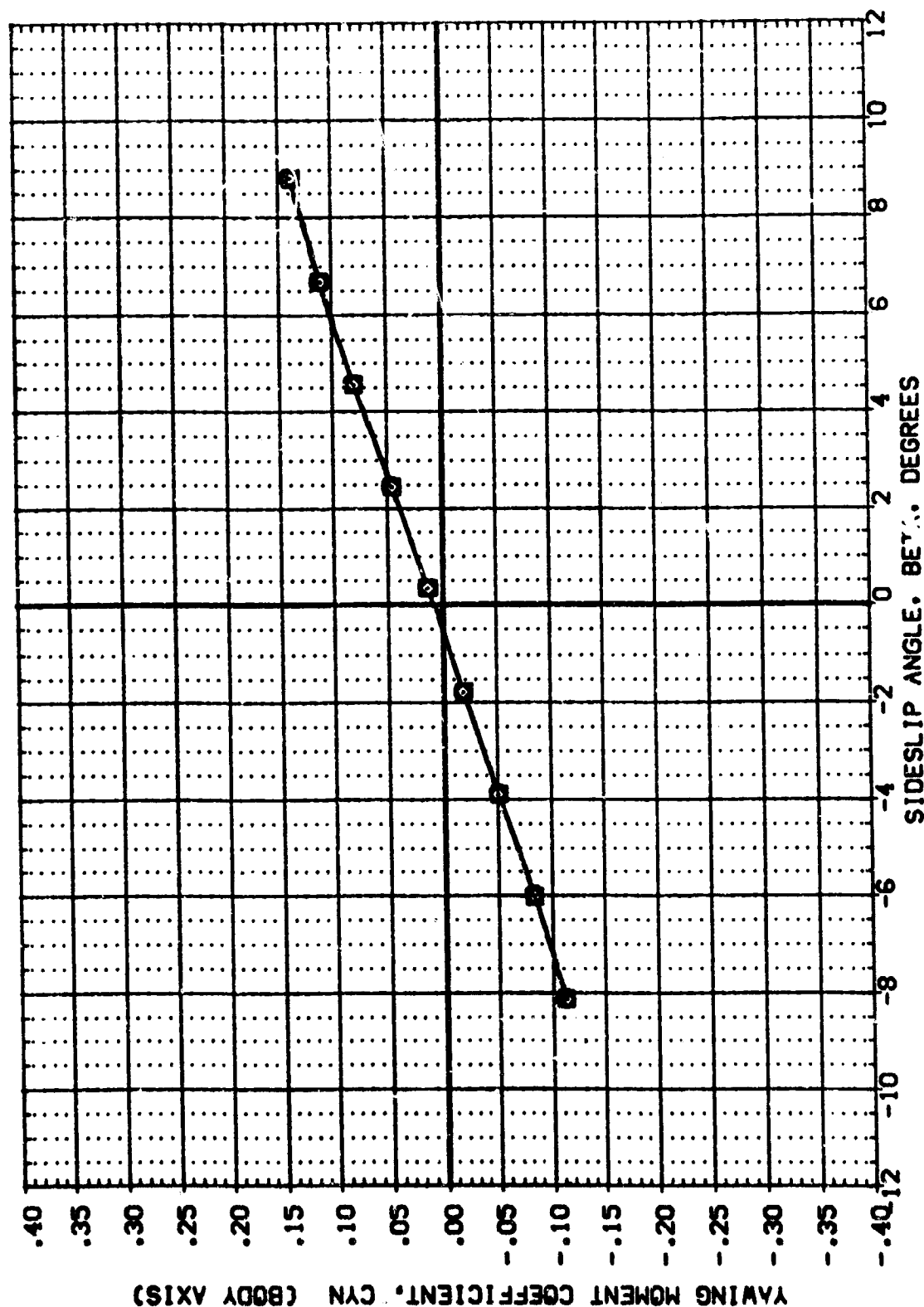
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(B)MACH = .90

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (889005) MSFC 980(I48) (034)(I79)(S12)
 (889003) MSFC 980(I48) (034)(I14)(S12)
 (889002) MSFC 980(I48) (034)(I14)(S12)(U6)

ALPHA ORBINC
 .000
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

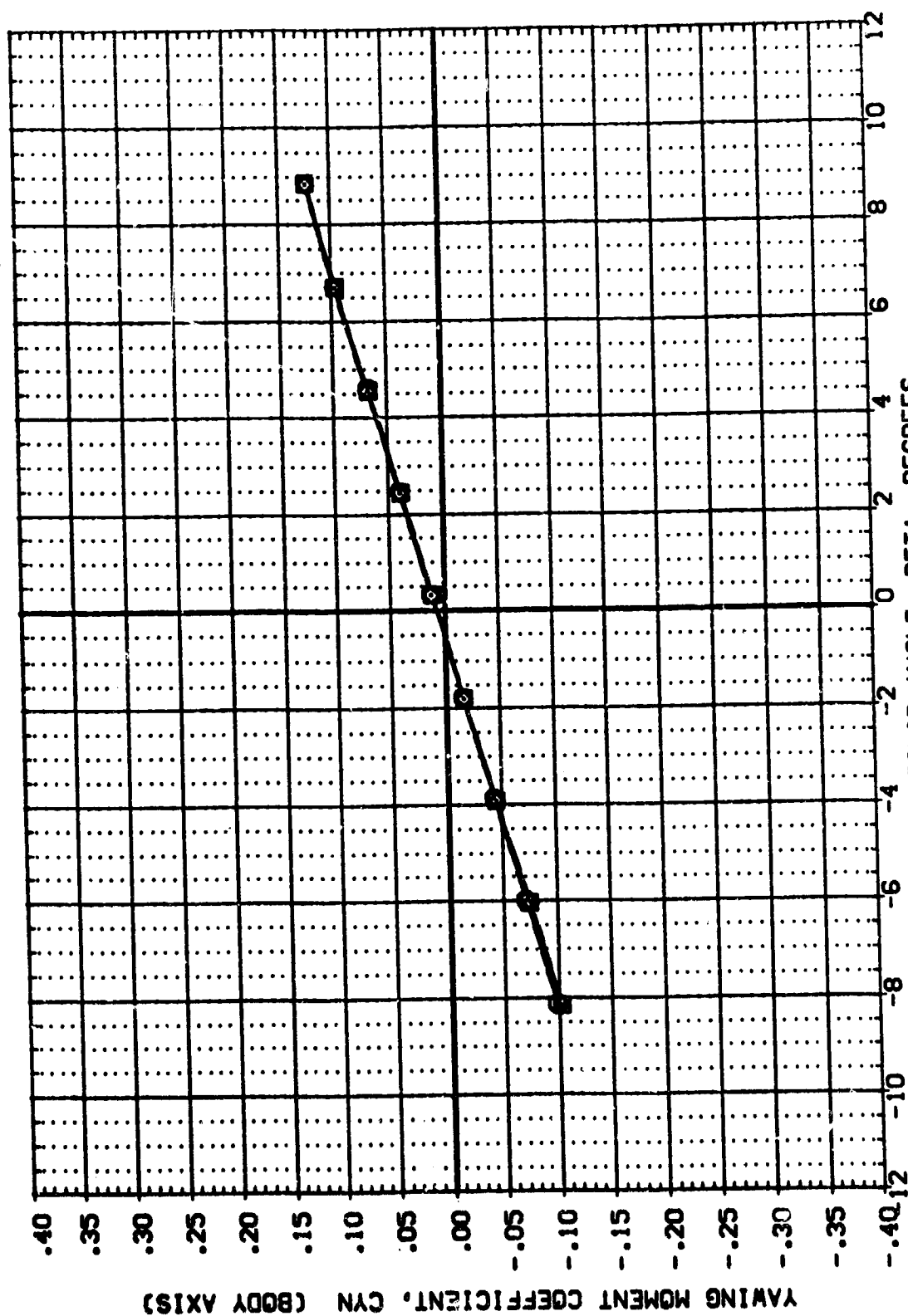


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(C)MACH = 1.10

ALPHA	BREXING
.000	.000
.000	.000
.000	.000

DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
{SMB001}		H50C	S80(1A48) [004]T9(1S12)
{SMB002}		H50C	S80(1A48) [004]T14(1S12)
{SMB003}		H50C	S80(1A48) [004]T14(1S12)(US)
{SMB004}		H50C	S80(1A48) [004]T14(1S12)



SIDESLIP ANGLE. BETA. DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

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$$\rho_0 \text{MACH} = 1.25$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

[885002] MSFC 580(A48) (C04)(T9)(S12)

[885003] MSFC 580(A48) (C04)(T14)(S12)

[885002] MSFC 580(A48) (C04)(T14)(S12)(US)

ALPHA DBSINC

.000 .000

.000 .000

.000 .000

REFERENCE INFORMATION

SREF 6.1980 SQ. IN.

LREF 5.1500 IN.

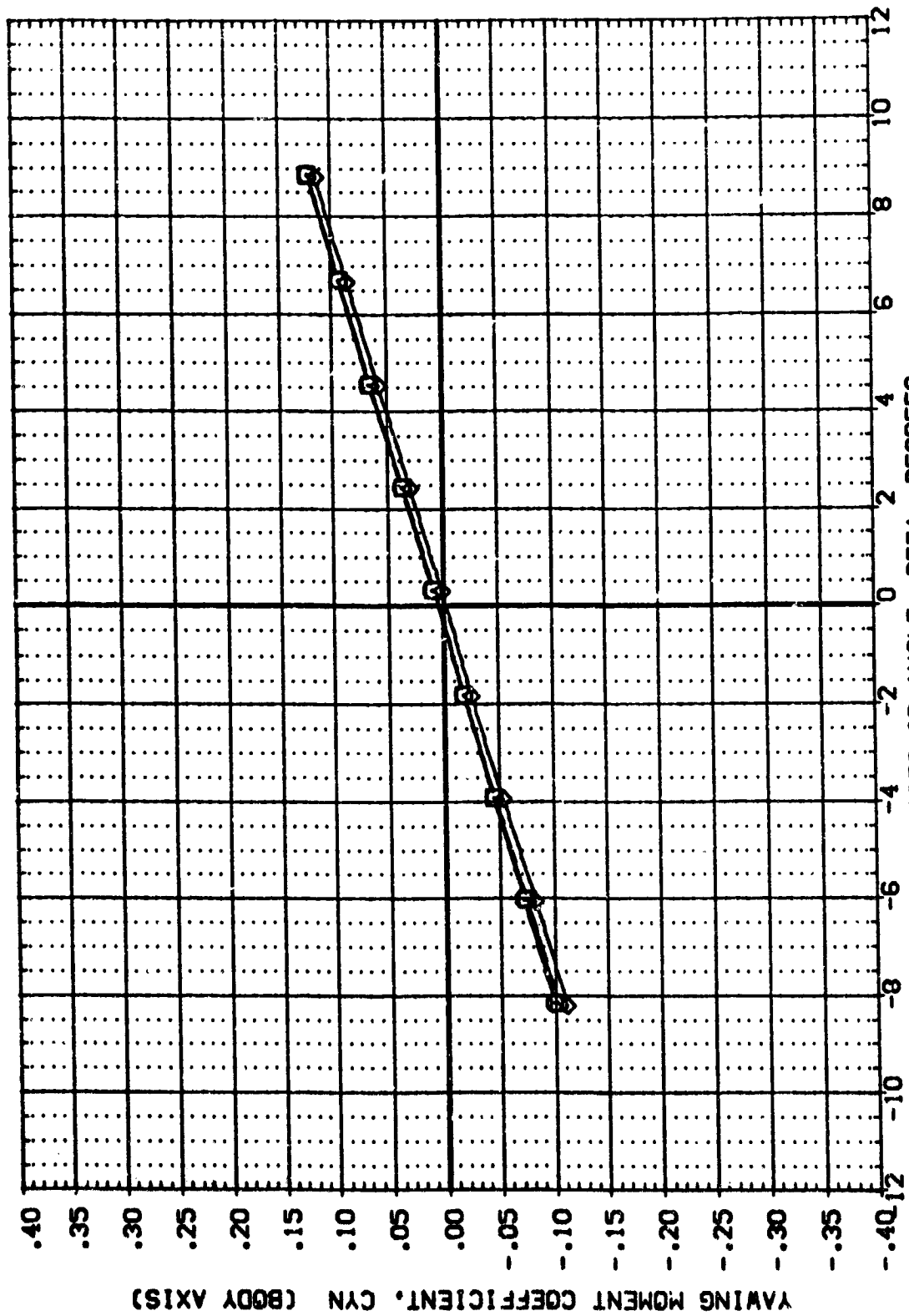
BREF 5.1600 IN.

XREF 2.7200 IN.

YREF .0000 IN.

ZREF .0000 IN.

SCALE .0040



SIDESLIP ANGLE, BETA, DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

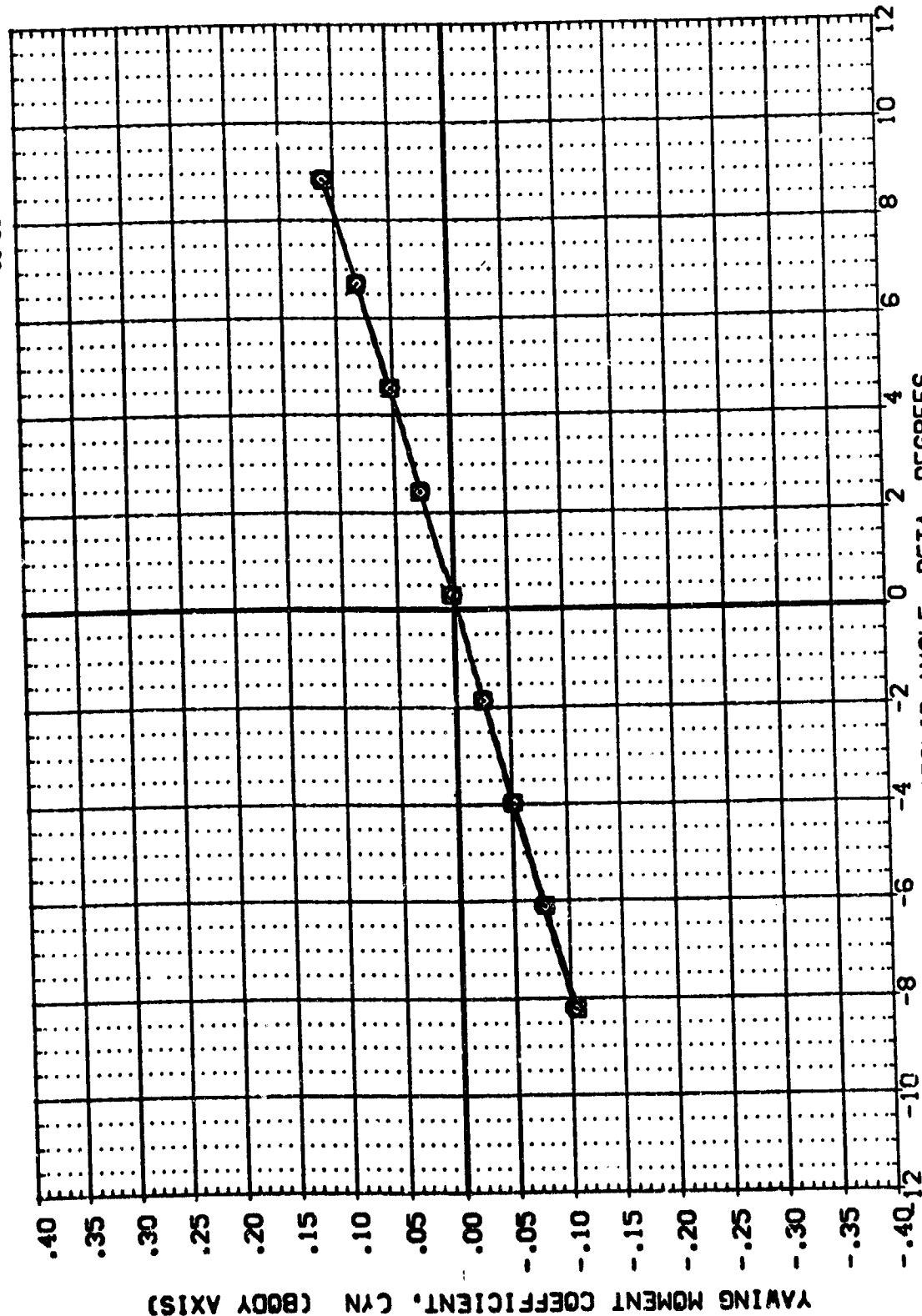
(E)MACH = 1.46



DATA SET SYMBOL CONFIGURATION DESCRIPTION
(B85005) H5FC 590(IA48) (034)(T9)(S12)
(B85007) H5FC 590(IA48) (034)(T1)(S12)
(B85002) H5FC 590(IA48) (034)(T1)(S12)(U6)

ALPHA ORBINC
.000 .000
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1980 SQ.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0010

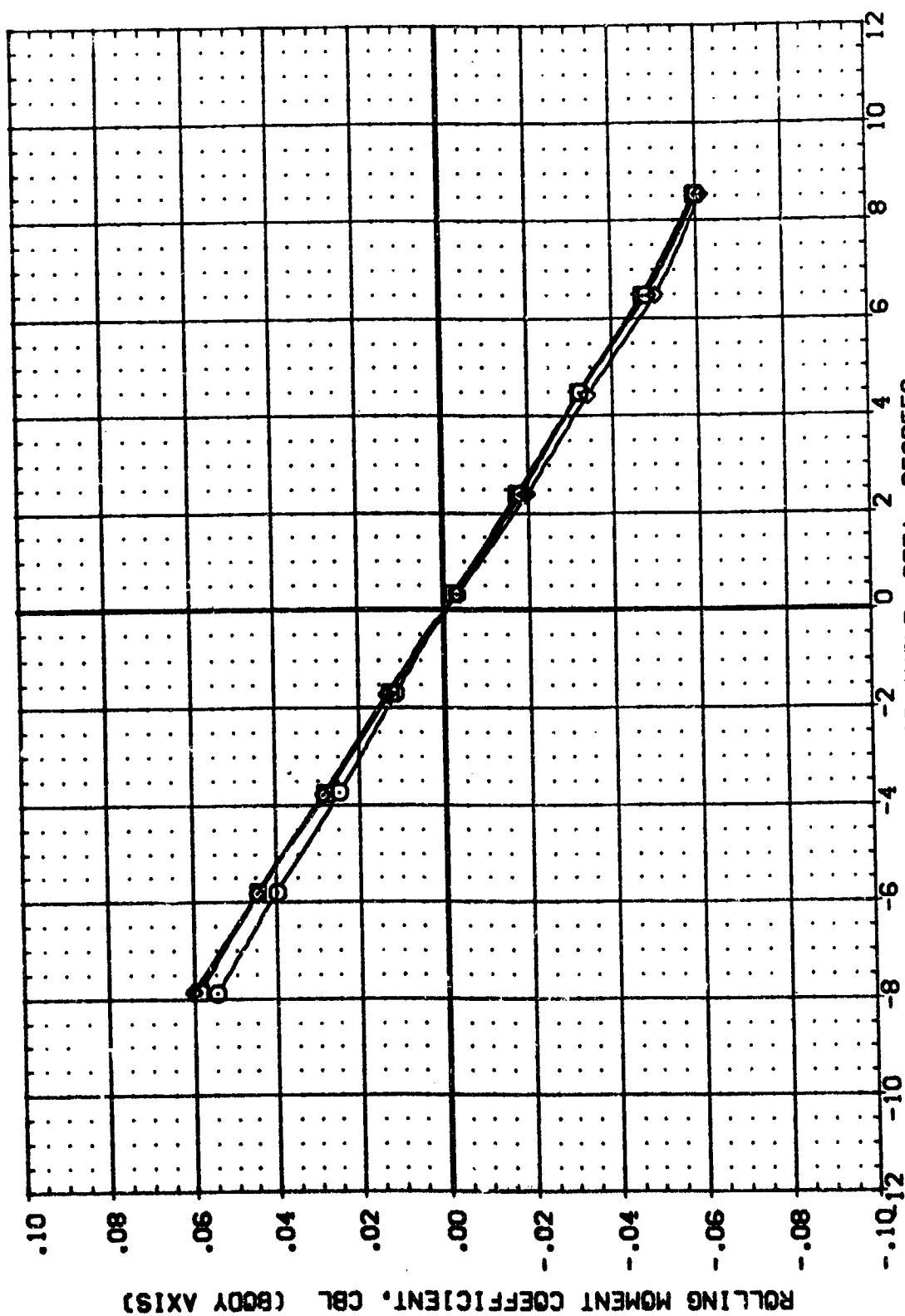


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)
(F)MACH = 1.96
PAGE 131

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBITAL
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885008) MSFC 580(A48) (034)(T9)(S12)
 (885009) MSFC 580(A48) (034)(T14)(S12)
 (885010) MSFC 580(A48) (034)(T14)(S12)(U6)



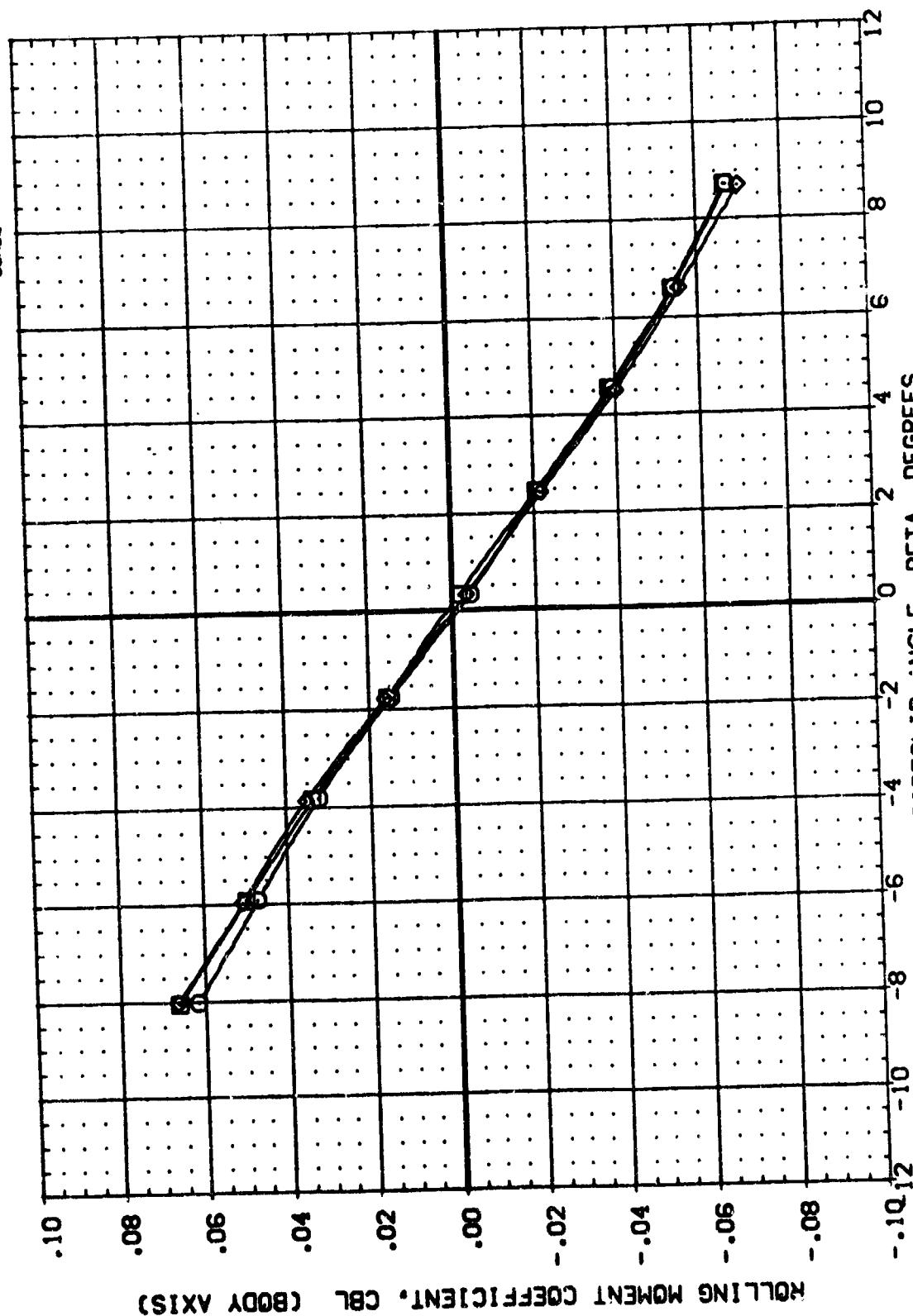
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(A)MACH = .60

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (889006) H5FC 580(1A19) (034)(T9)(S12)
 (889007) H5FC 580(1A48) (034)(T14)(S12)
 (889002) H5FC 580(1A48) (034)(T14)(S12)(U6)

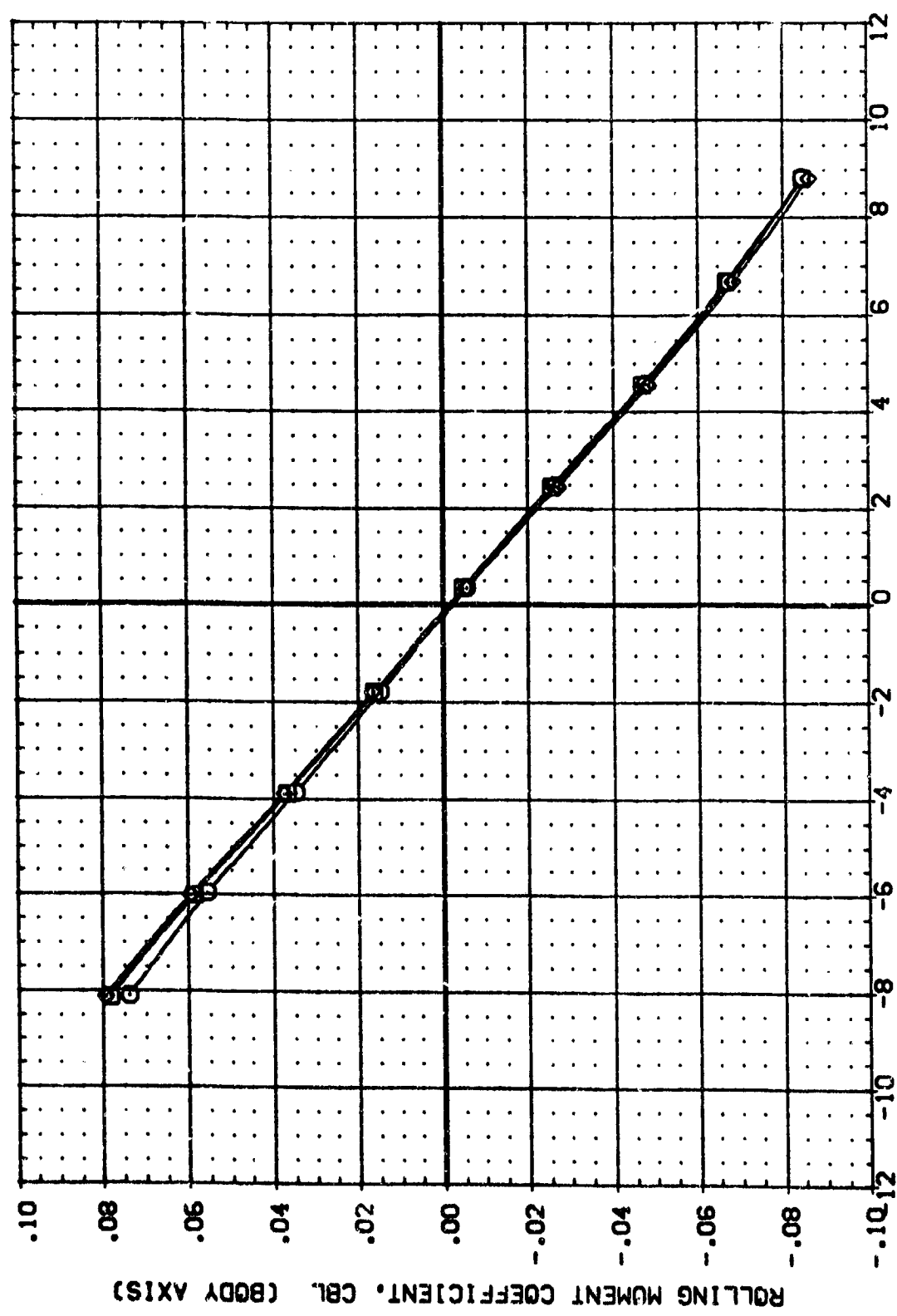


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)
 (B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885006) MSFC 580(1A48) (034)(T9)(S12)
 (885003) MSFC 580(1A48) (034)(T14)(S12)
 (885002) MSFC 580(1A48) (034)(T14)(S12)(US)

ALPHA ORBITING
 .000 .000
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



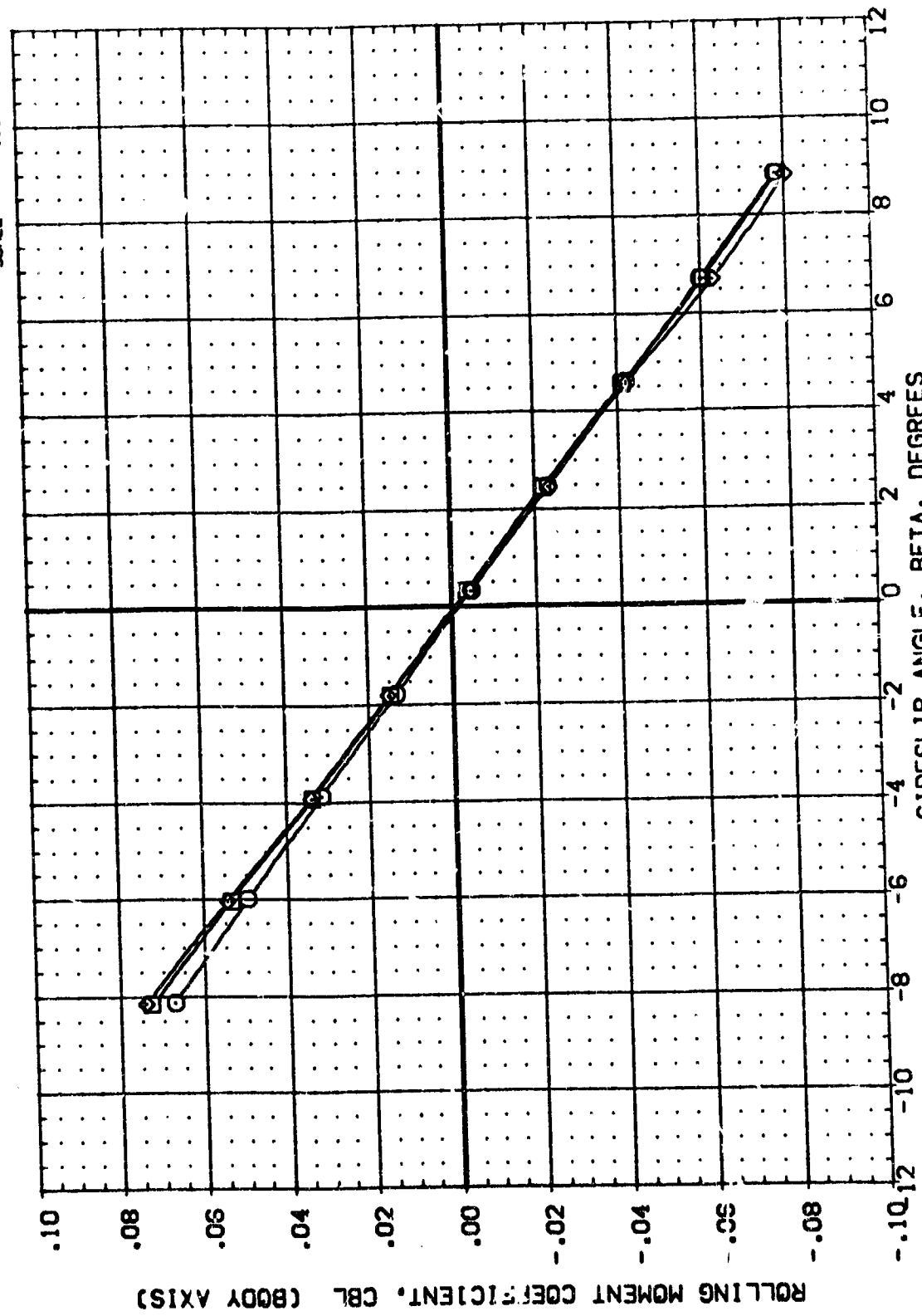
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(C)MACH = 1.10

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885006) MSC 580 (A48) (034) (T9) (S12)
 (885003) MSC 580 (A48) (034) (T14) (S12)
 (885002) MSC 580 (A48) (034) (T14) (S12) (U6)

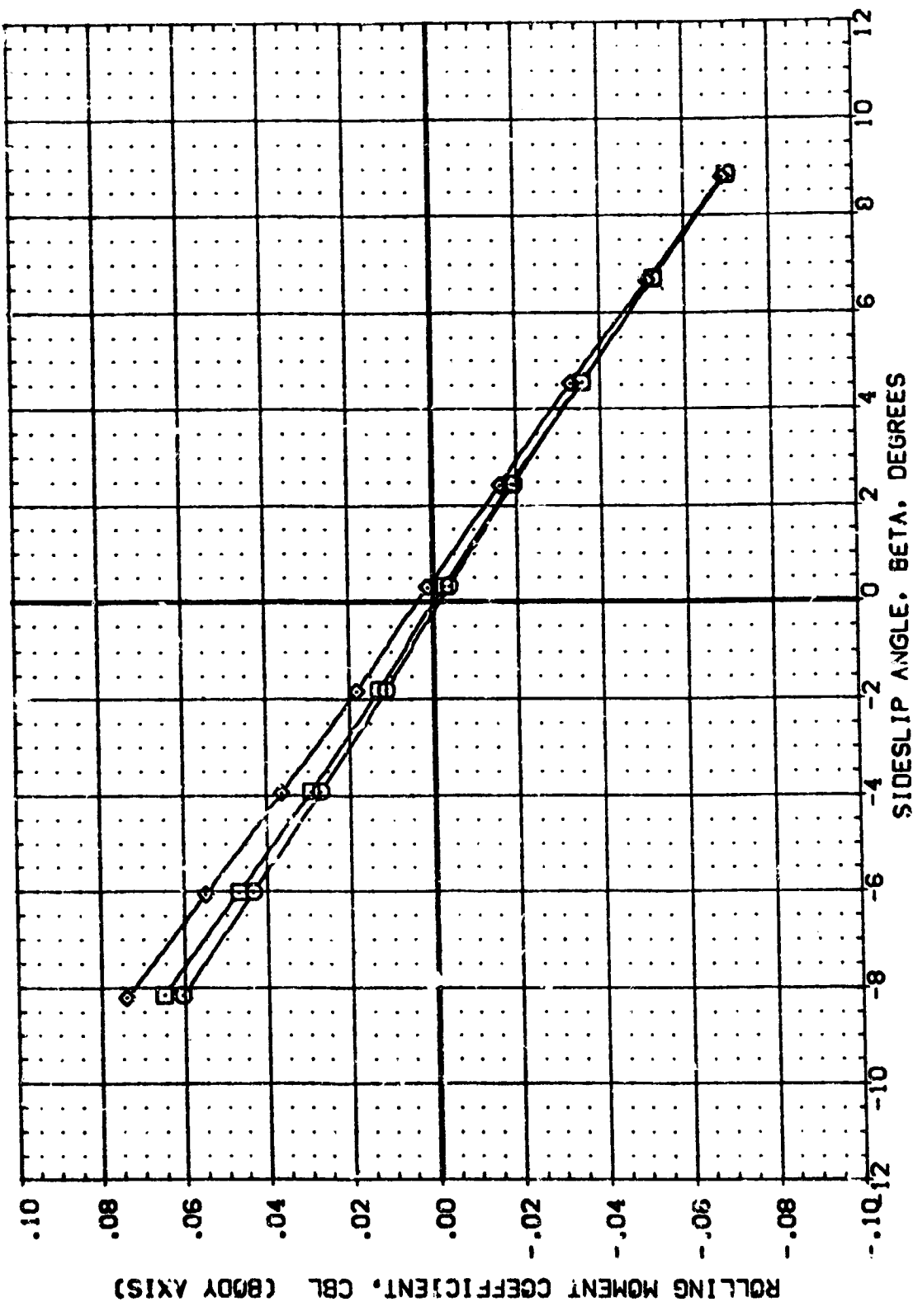


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)
 (0.25)MACH = 1.25

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 [865008] MSFC 590(I46) (034)(T9)(S12)
 [865009] MSFC 590(I48) (034)(T14)(S12)
 [865010] MSFC 590(I48) (034)(T14)(S12)(U6)

ALPHA ORBINC
 .000 .000
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 8.1960 50. IN.
 LREF 5.1600 IN.
 BREF 5.1500 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .1240



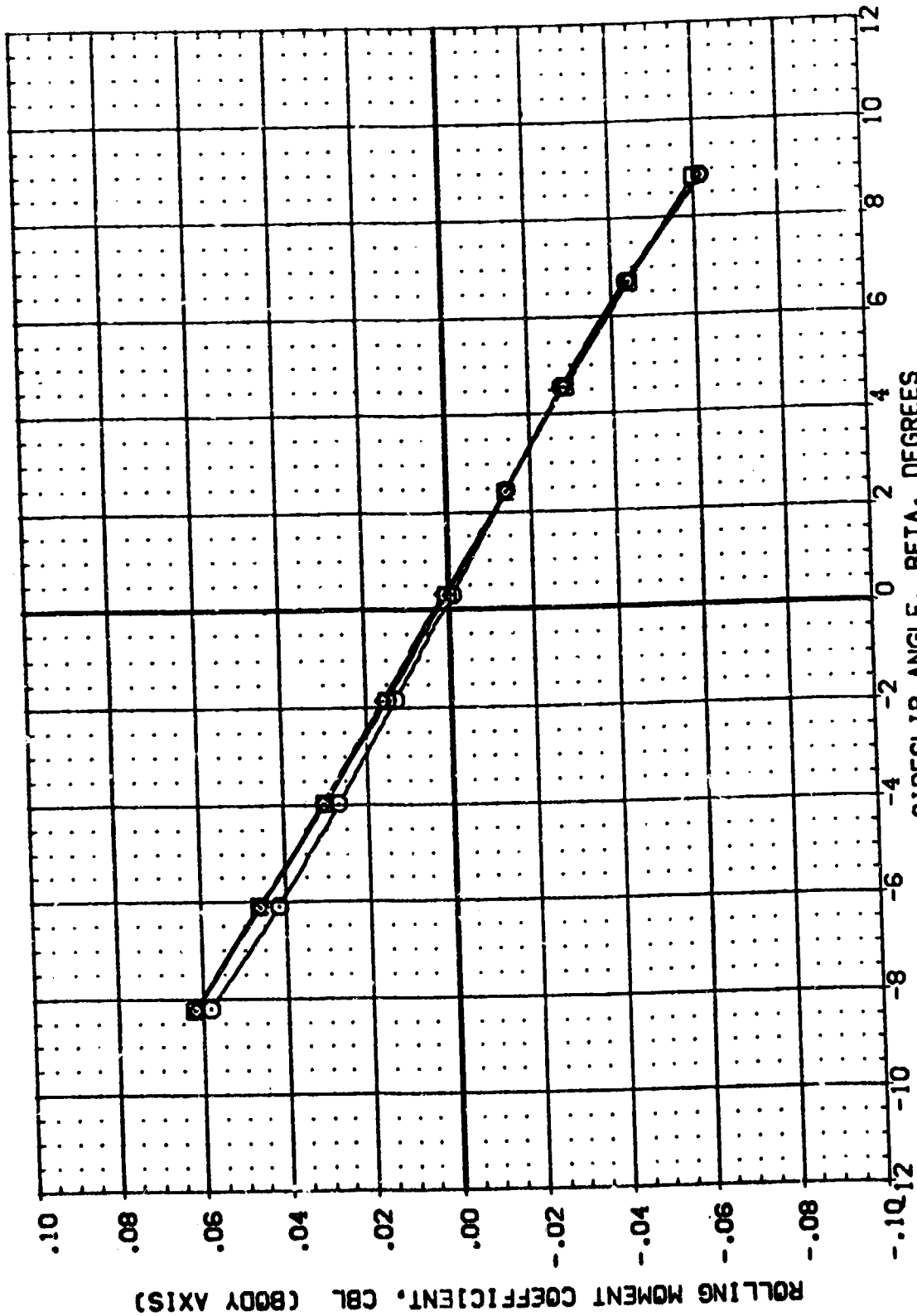
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(E)MACH = 1.46

REFERENCE INFORMATION
 SREF 5.1800 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B90005) MFC 580 (A48) (034) (T9) (S12)
 (B90003) MFC 580 (A48) (034) (T14) (S12)
 (B90002) MFC 580 (A48) (034) (T14) (S12) (L6)



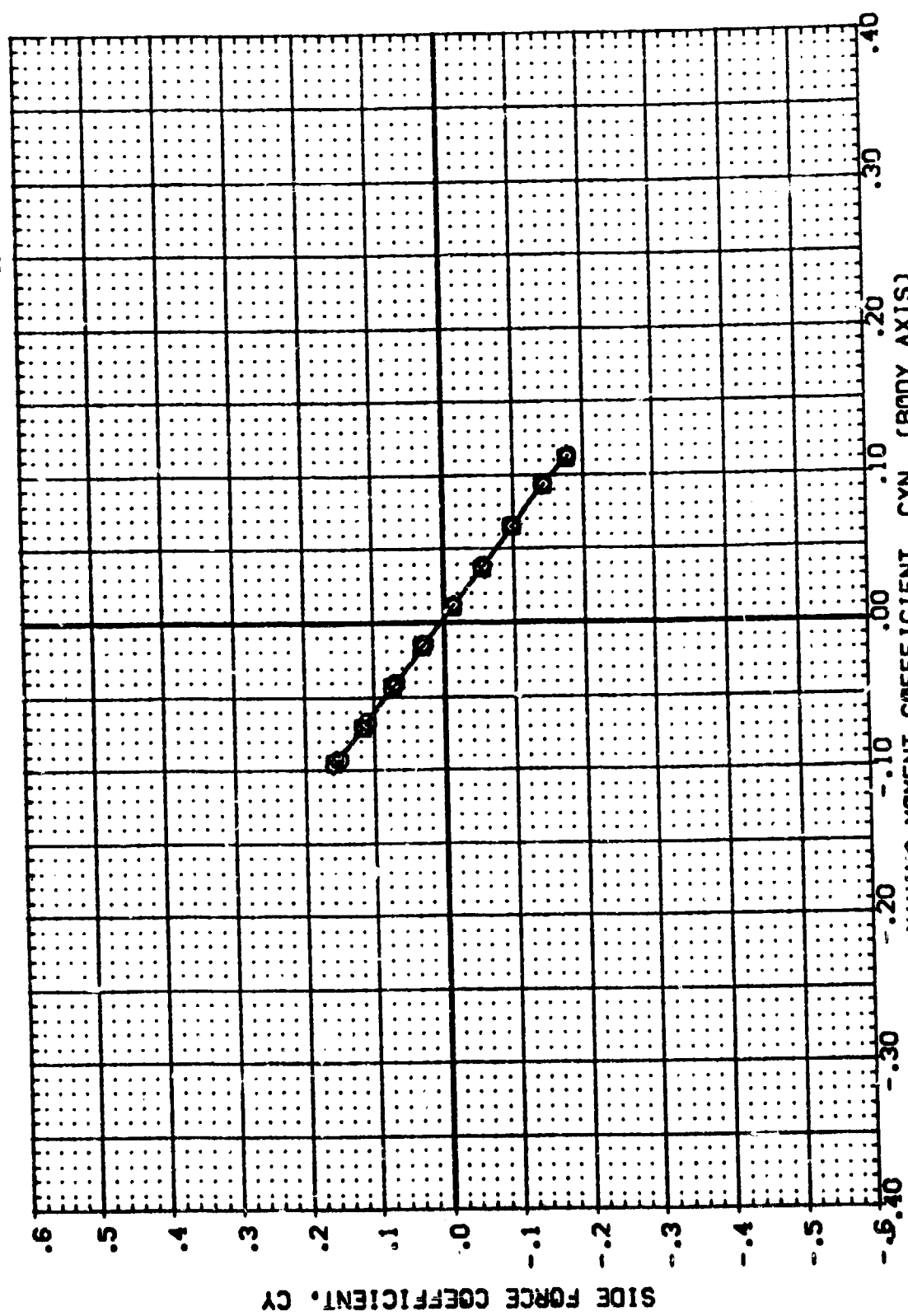
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)

(F)MACH = 1.96

REFERENCE INFORMATION
 SREF 6.1900 SO.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88005) HFC 580 (A48) (034)(T9)(S12)
 (B88003) HFC 580 (A48) (034)(T14)(S12)
 (B88002) HFC 580 (A48) (034)(T14)(S12)(U6)



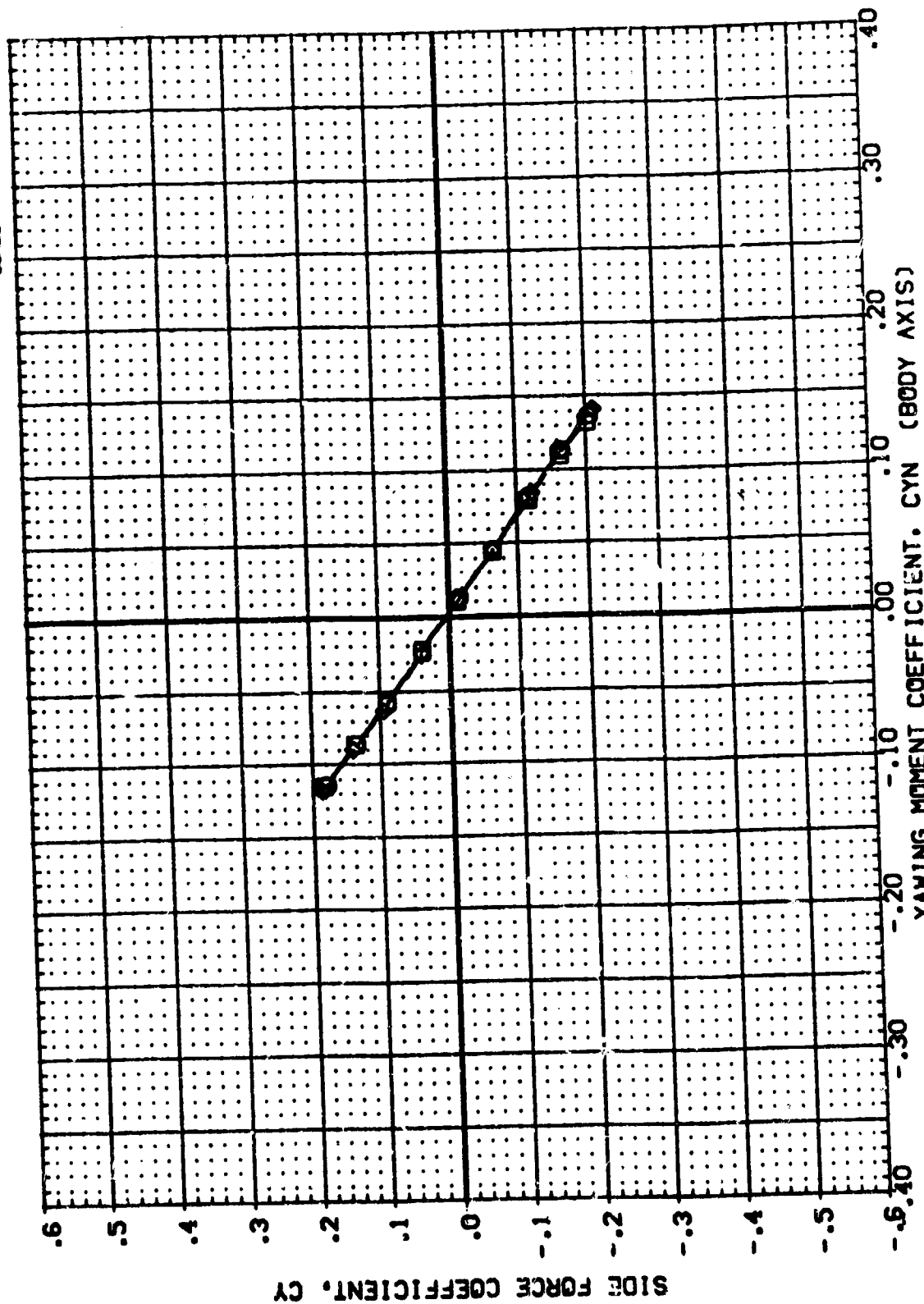
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(A)MACH = .60

REFERENCE INFORMATION
 SREF 6.1900 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B85005) H5FC 580(1A48) (034)(T9)(S12)
 (B85003) H5FC 580(1A48) (034)(T14)(S12)
 (B85002) H5FC 580(1A48) (034)(T14)(S12)(US)



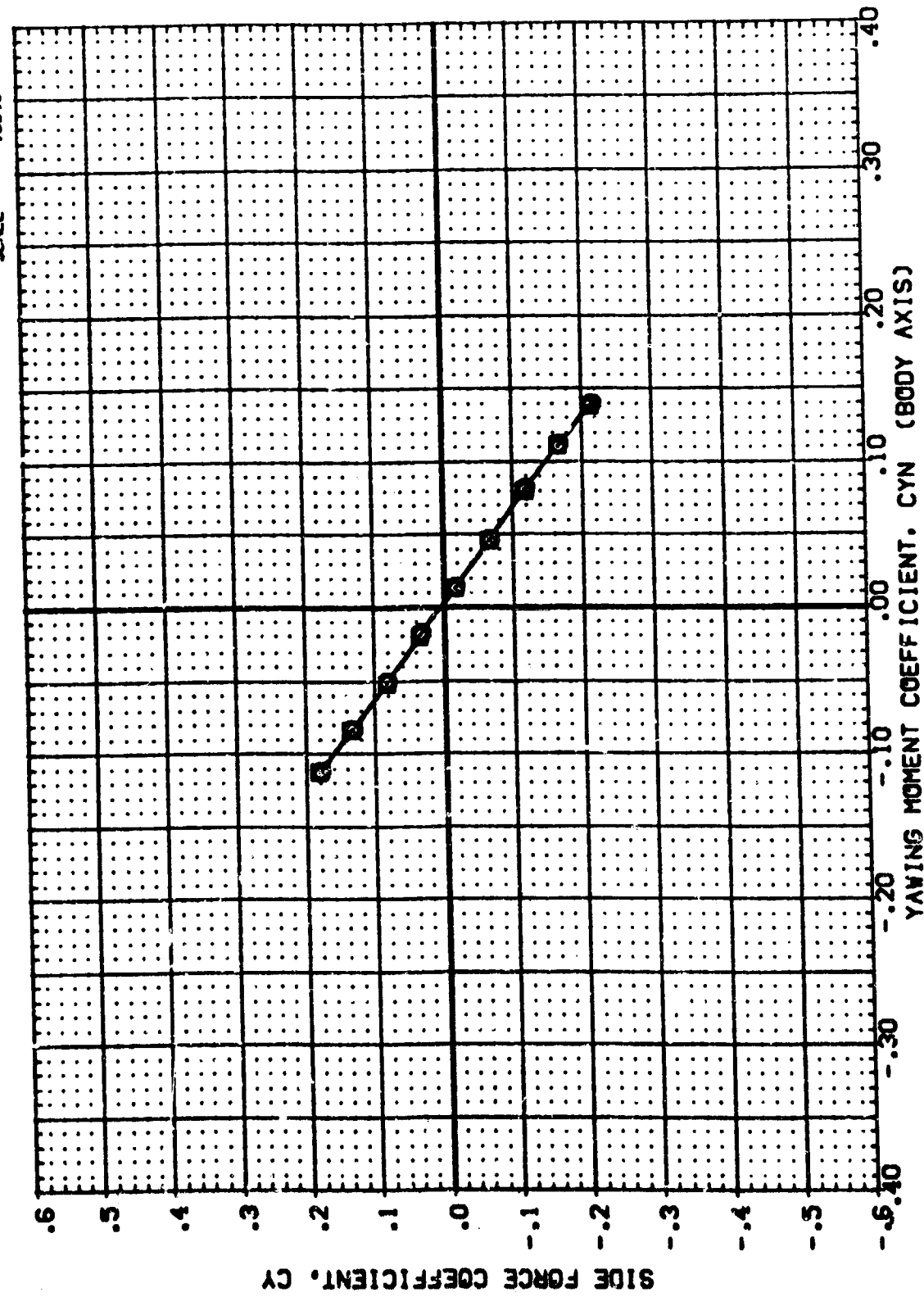
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)

(B)MACH = .90

REFERENCE INFORMATION
 SREF 6.1900 SQ. IN.
 LREF 3.1600 IN.
 BREF 3.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

ALPHA 0.000
 ORBIT 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885006) H8FC 550(1A48) (034)(19)(S12)
 (885007) H8FC 550(1A48) (034)(114)(S12)
 (885008) H8FC 550(1A48) (034)(114)(S12)(US)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACTER.(ORBITER ONLY)
 (C)MACH = 1.10
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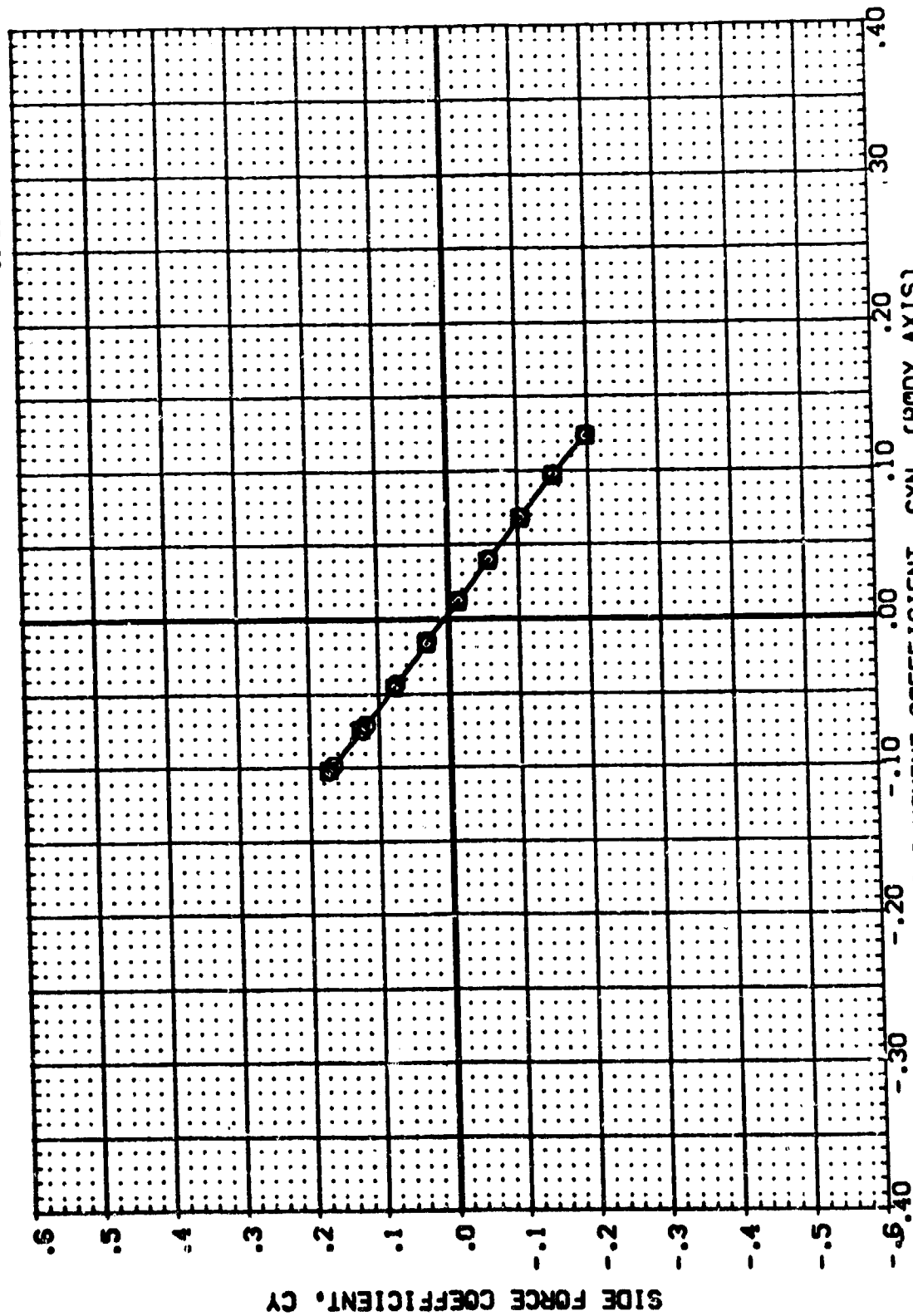


DATA SET SYMBOL CONFIGURATION DESCRIPTION
(000003) H5FC 500(1A48) (004)(79)(512)
(000003) H5FC 500(1A48) (004)(79)(512)
(000002) H5FC 500(1A48) (004)(79)(512)(L6)

ALPHA 0.000
0.000
0.000
0.000

0.000
0.000
0.000
0.000

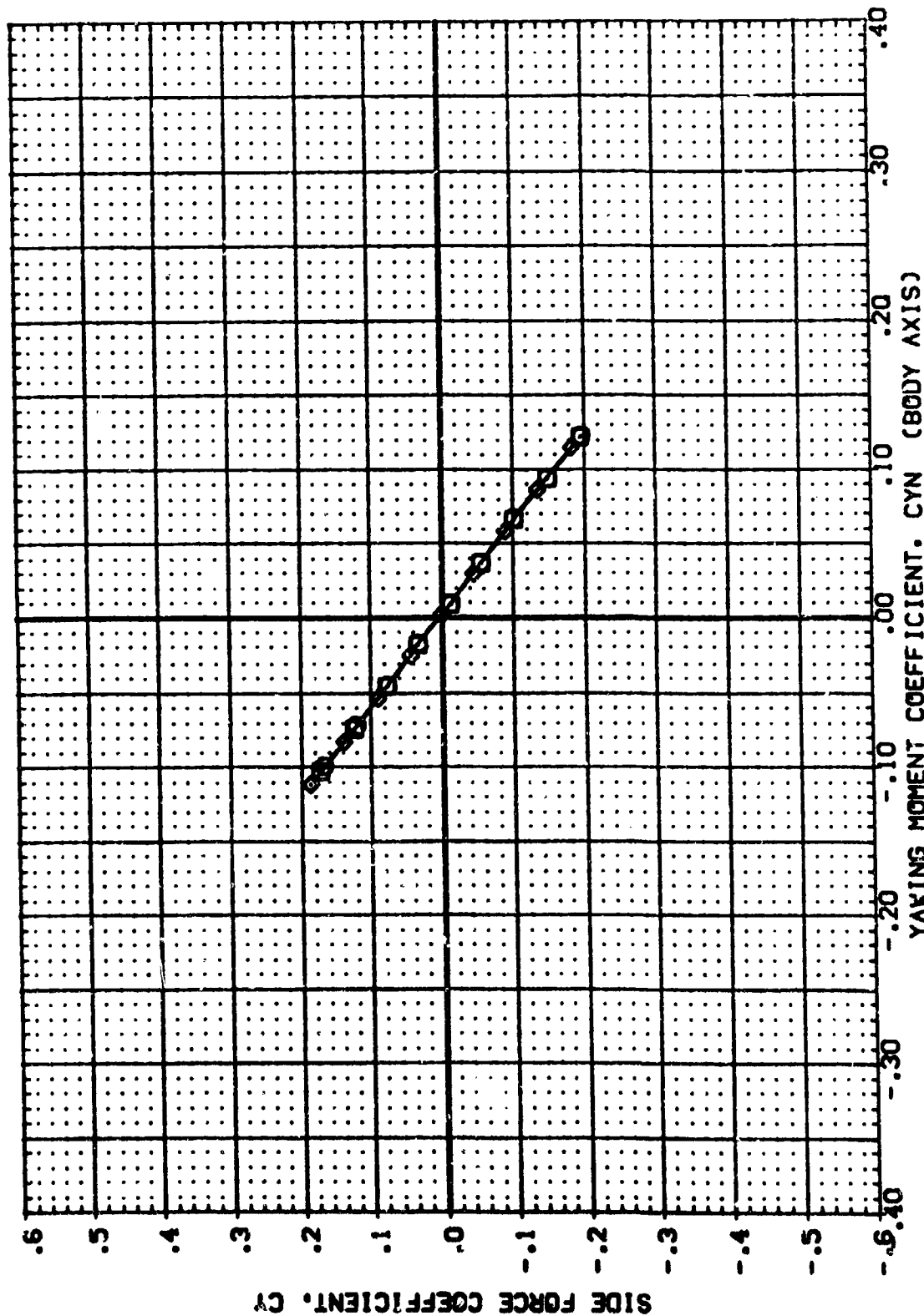
REFERENCE INFORMATION
SREF 6.1500 50. IN.
LREF 5.1500 IN.
BREF 5.1500 IN.
XREF 2.7200 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)
(0)MACH = 1.25
PAGE 141

ALPHA	.000 .000 .000
BETA	.000 .000 .000

DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
{F0000}		360 (1A48)	(004) (19) (S12)
{B0000}		360 (1A48)	(004) (14) (S12)
{B0002}		360 (1A48)	(004) (14) (S12) (US)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT, CHARACTERISTIC (ORBITER ONLY)

CEJMACH = 1.46

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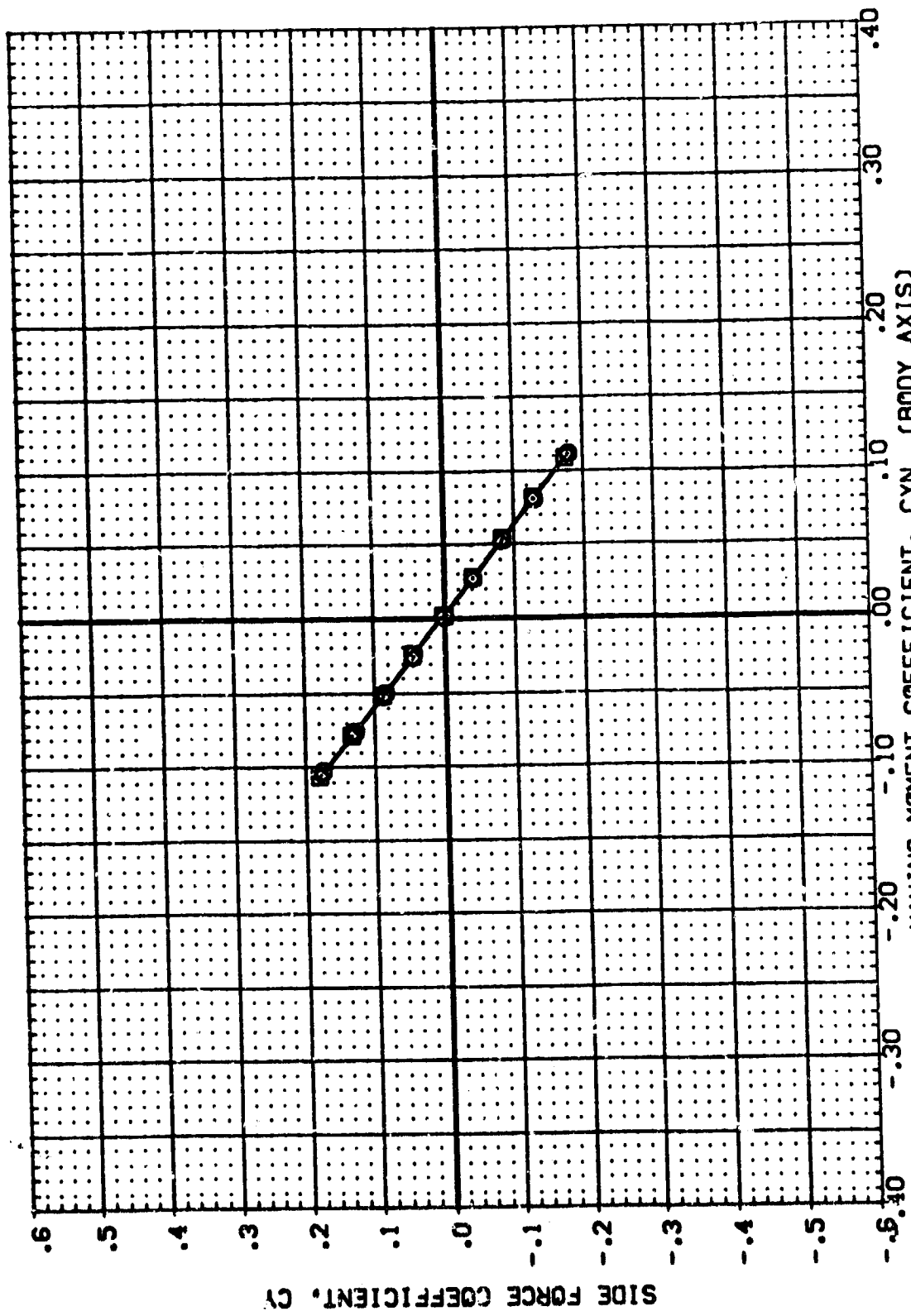
DATA SET SYMBOL: (885006) (885003) (885002)

CONFIGURATION DESCRIPTION: MSFC 580(A48) (034)(TS)(S12) MSFC 580(A48) (034)(T14)(S12) MSFC 580(A48) (034)(T14)(S12)(U6)

ALPHA: .000 .000 .000

ORBITAL: .000 .000 .000

REFERENCE INFORMATION: SREF 6.1990 SQ. IN. LREF 5.1600 IN. BREF 5.1600 IN. XPRP 2.7200 IN. YPRP .0000 IN. ZPRP .0000 IN. SCALE .0040

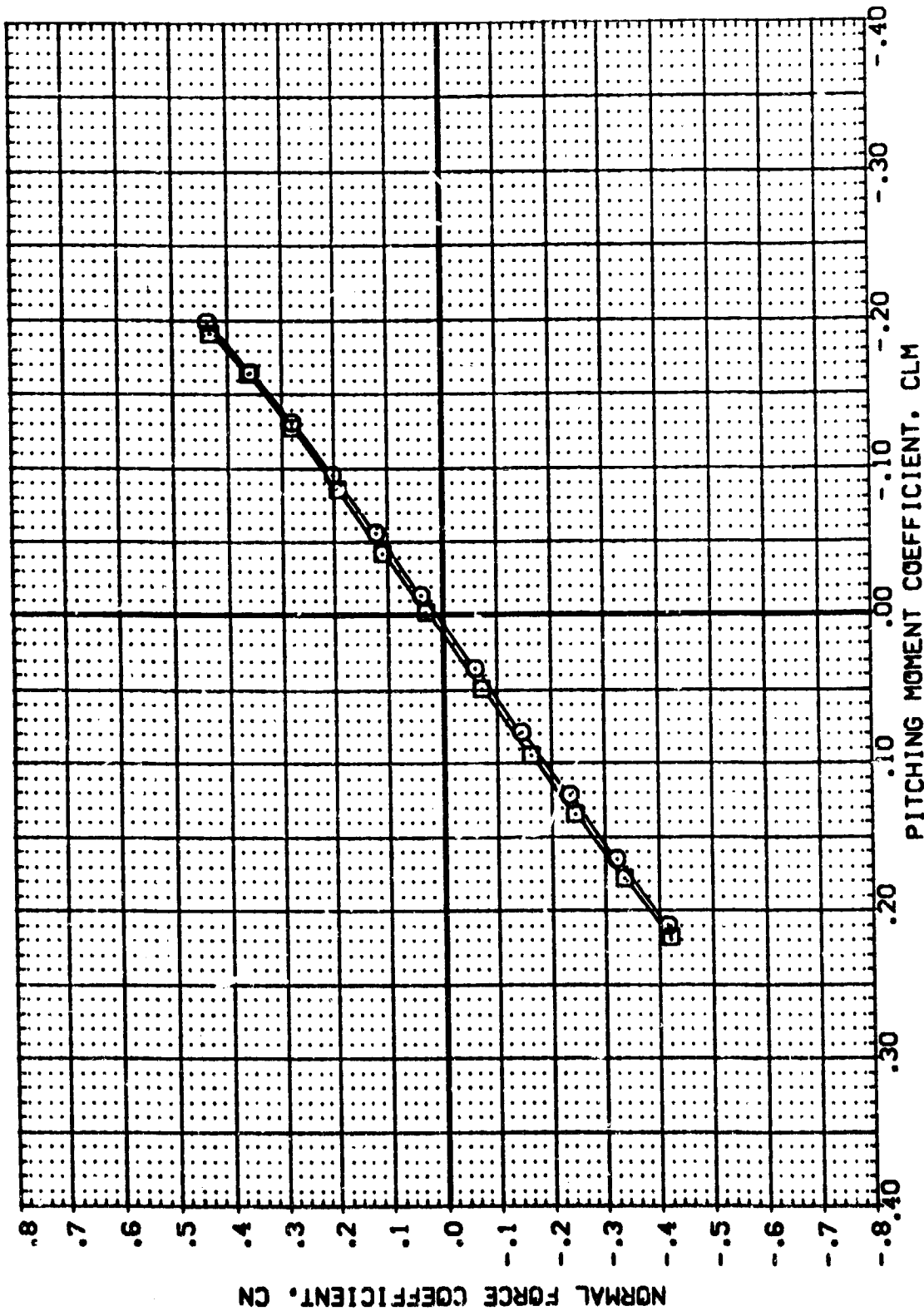


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)

(FJ)MACH = 1.96

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REFERENCE INFORMATION	
SREF	6.1980
LREF	5.1600
BREF	5.1600
XMRP	2.7200
YMRP	.0000
ZMRP	.0000
SCALE	.0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

CA)MACH = 1.96

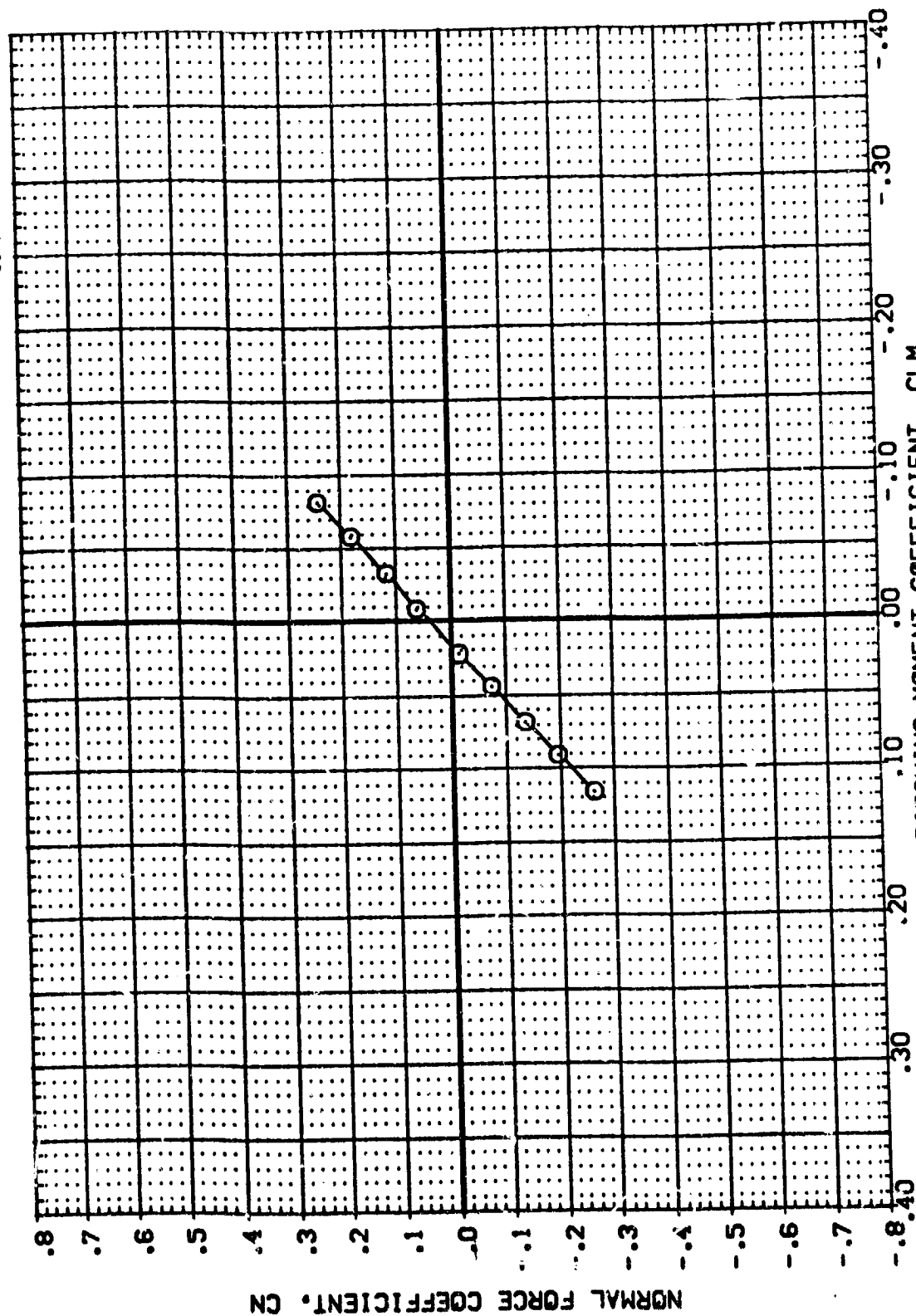
PAGE 144



DATA SET SYMBOL: (B88003)
CONFIGURATION DESCRIPTION: HSFC 579(1A37) (034)(114)(U7)
DATA NOT AVAILABLE

BETA: .000
ORBIT: .000

REFERENCE INFORMATION:
SREF: 6.1980 SQ. IN.
LREF: 5.1600 IN.
BREF: 5.1600 IN.
XPRP: 2.7200 IN.
YPRP: .0000 IN.
ZPRP: .0000 IN.
SCALE: .0010



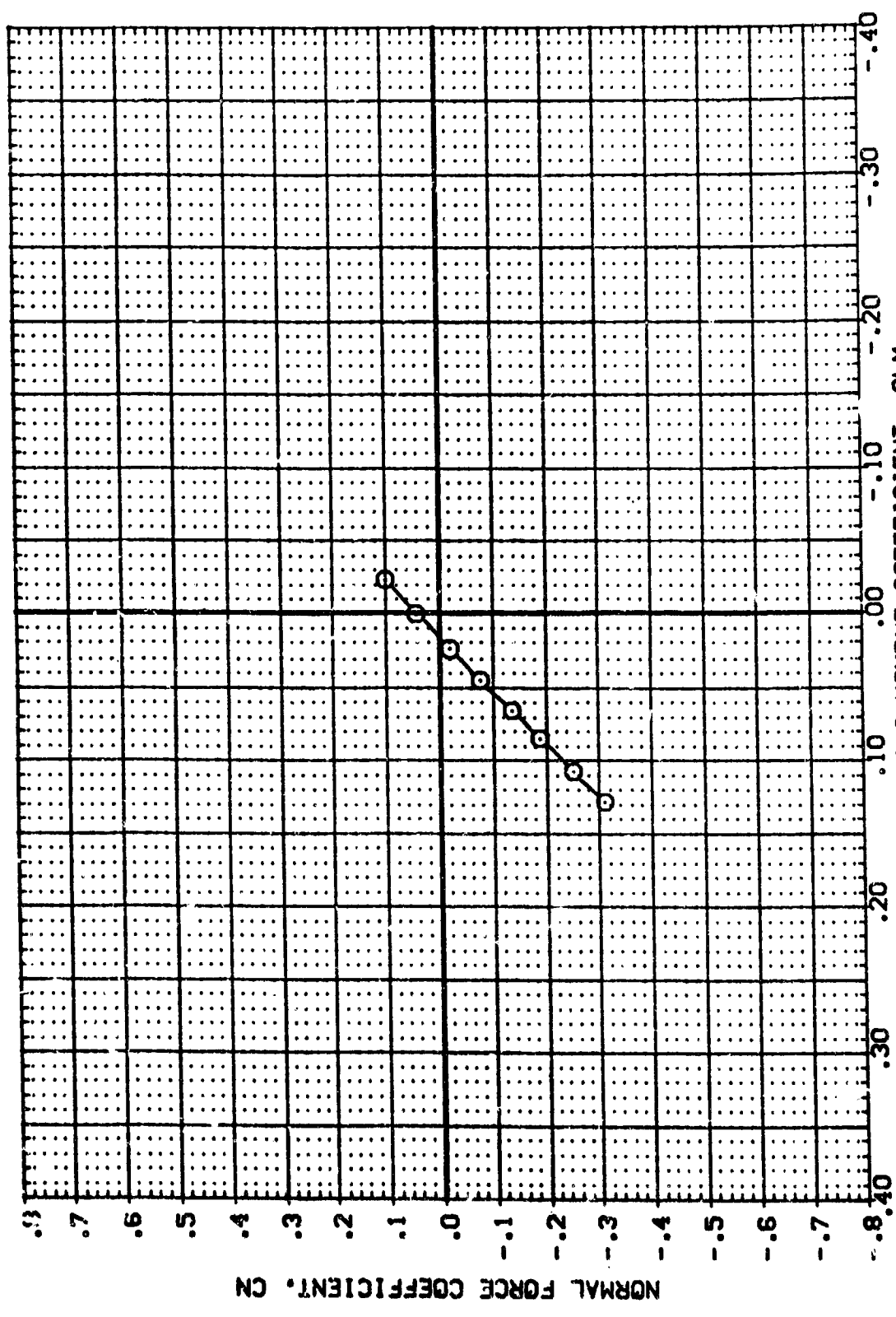
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

(B)MACH = 2.99

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88003) MSFC 575(1A37) (034)(114)(U7)
 (B88001) DATA NOT AVAILABLE

BETA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

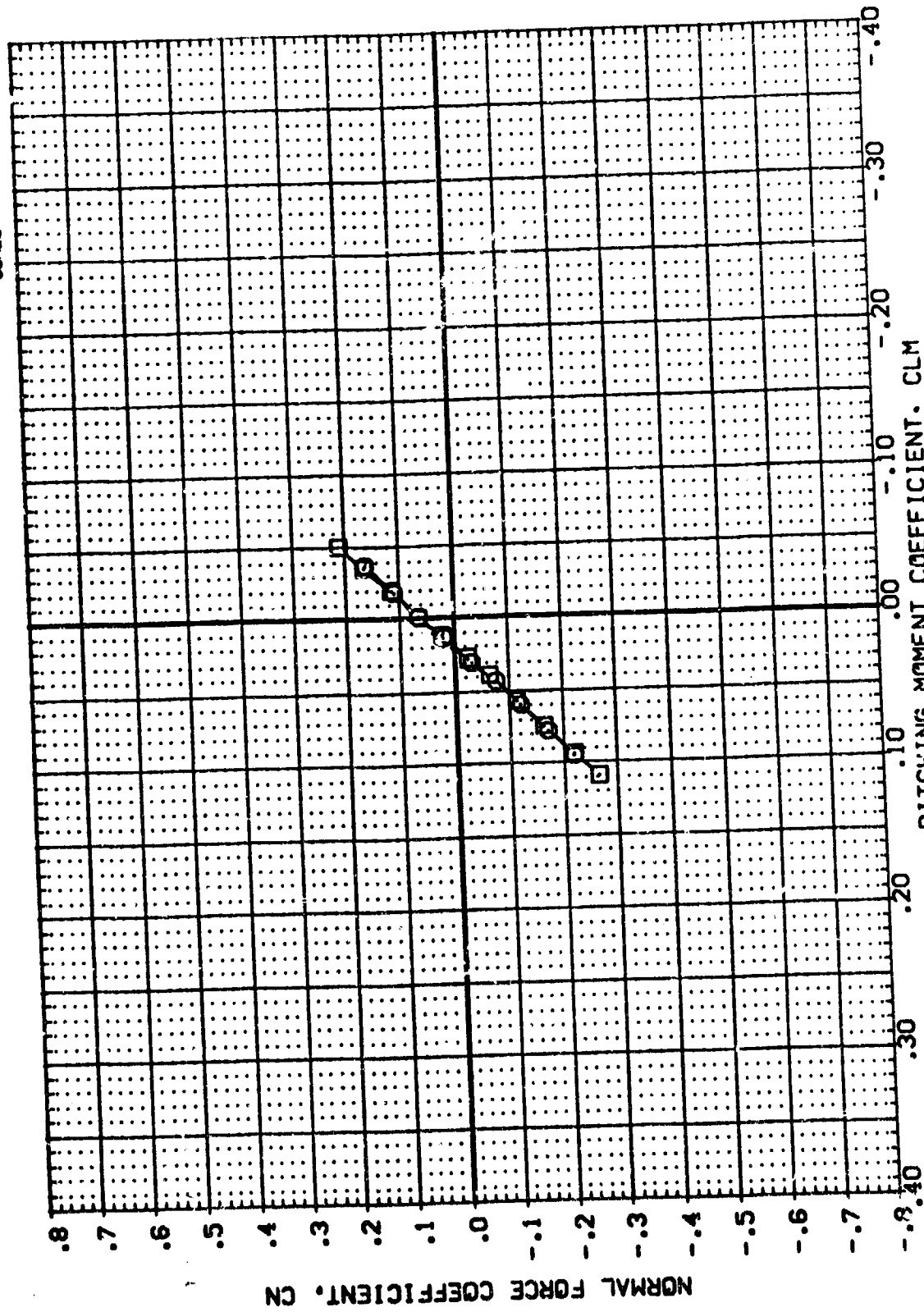


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

DATA SET SYMBOL: (850003) (180001)
 CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(114)(107)
 MSFC 579(1A37) (034)(175)

BETA: 0.00
 ORBINC: 0.00
 ORBINC: 0.00

REFERENCE INFORMATION
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



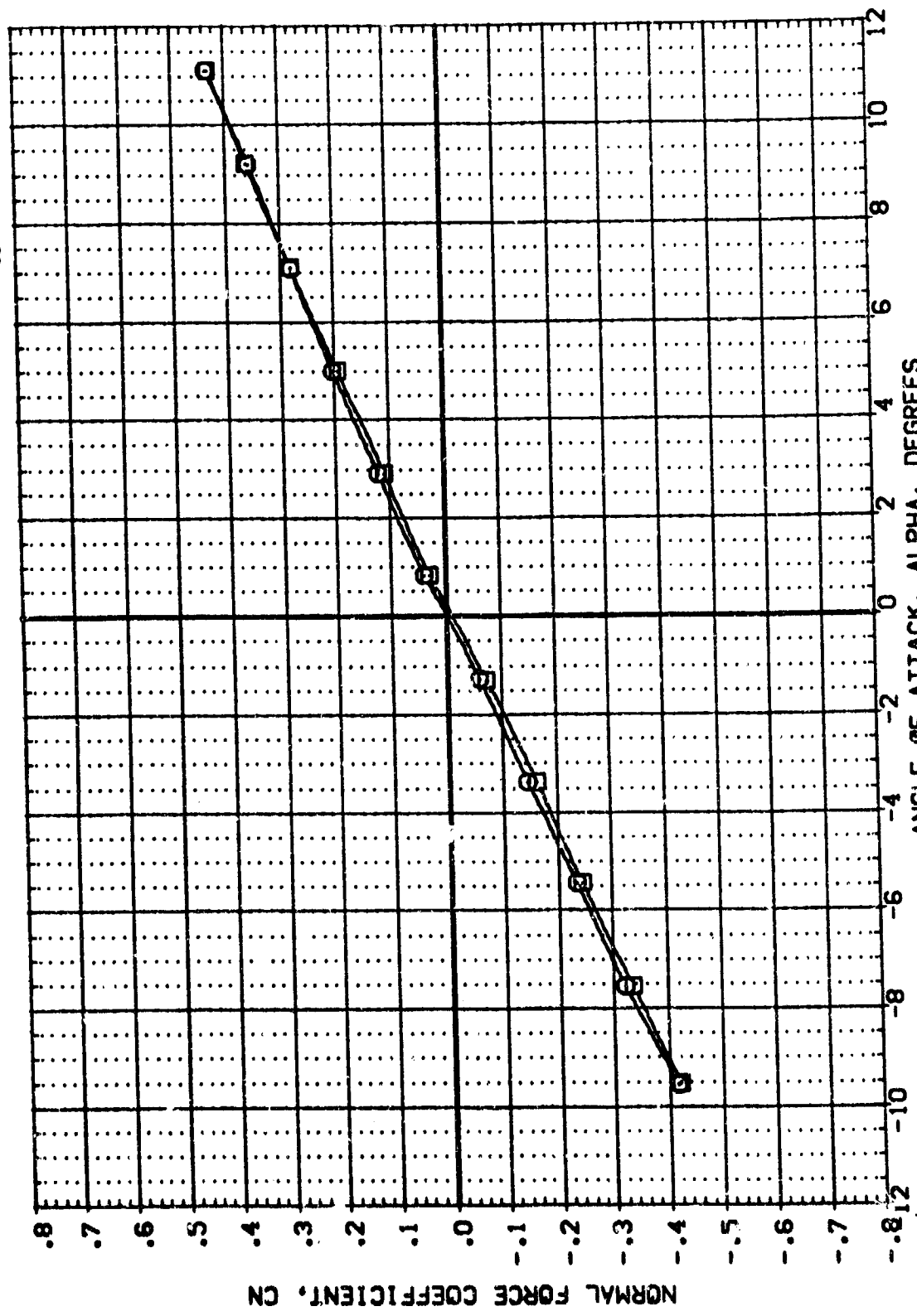
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

(D)MACH = 4.96

REFERENCE INFORMATION
 SREF 8.1960 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

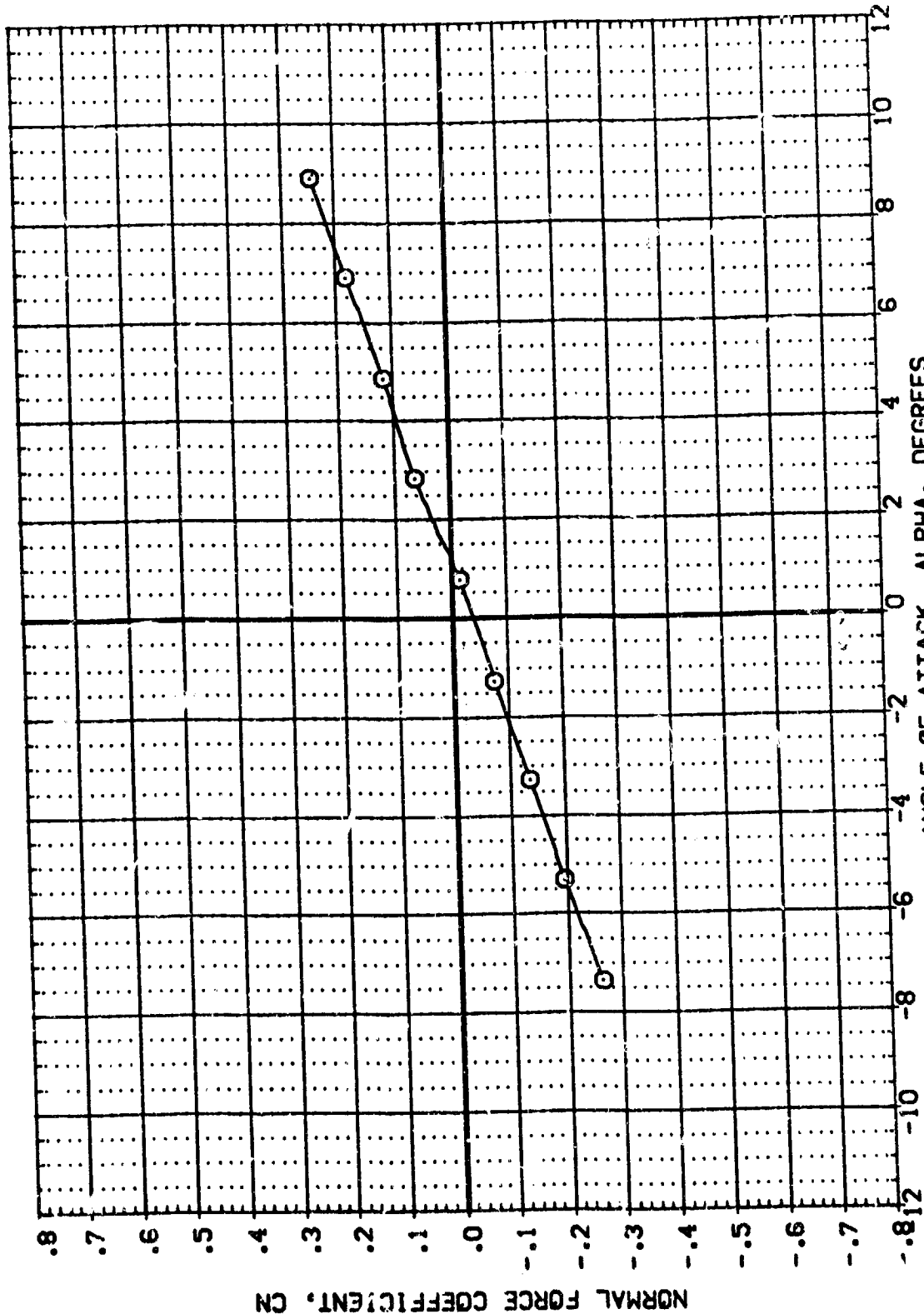
BETA .000
 ORBINC .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888003) HFC 575(1A37) (C34)(T14)(U7)
 (888001) HFC 575(1A37) (C34)(T9)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DRBINC	REFERENCE INFORMATION
(S88003)	MSFC 579(1A37) (034)(714)(U7)	.000	.000	SREF 6.1980 SQ IN.
(S88001)	DATA NOT AVAILABLE	.000	.000	LREF 5.1600 IN.
				BREF 5.1600 IN.
				WREF 2.7200 IN.
				YREF .0000 IN.
				ZREF .0000 IN.
				SCALE .0040



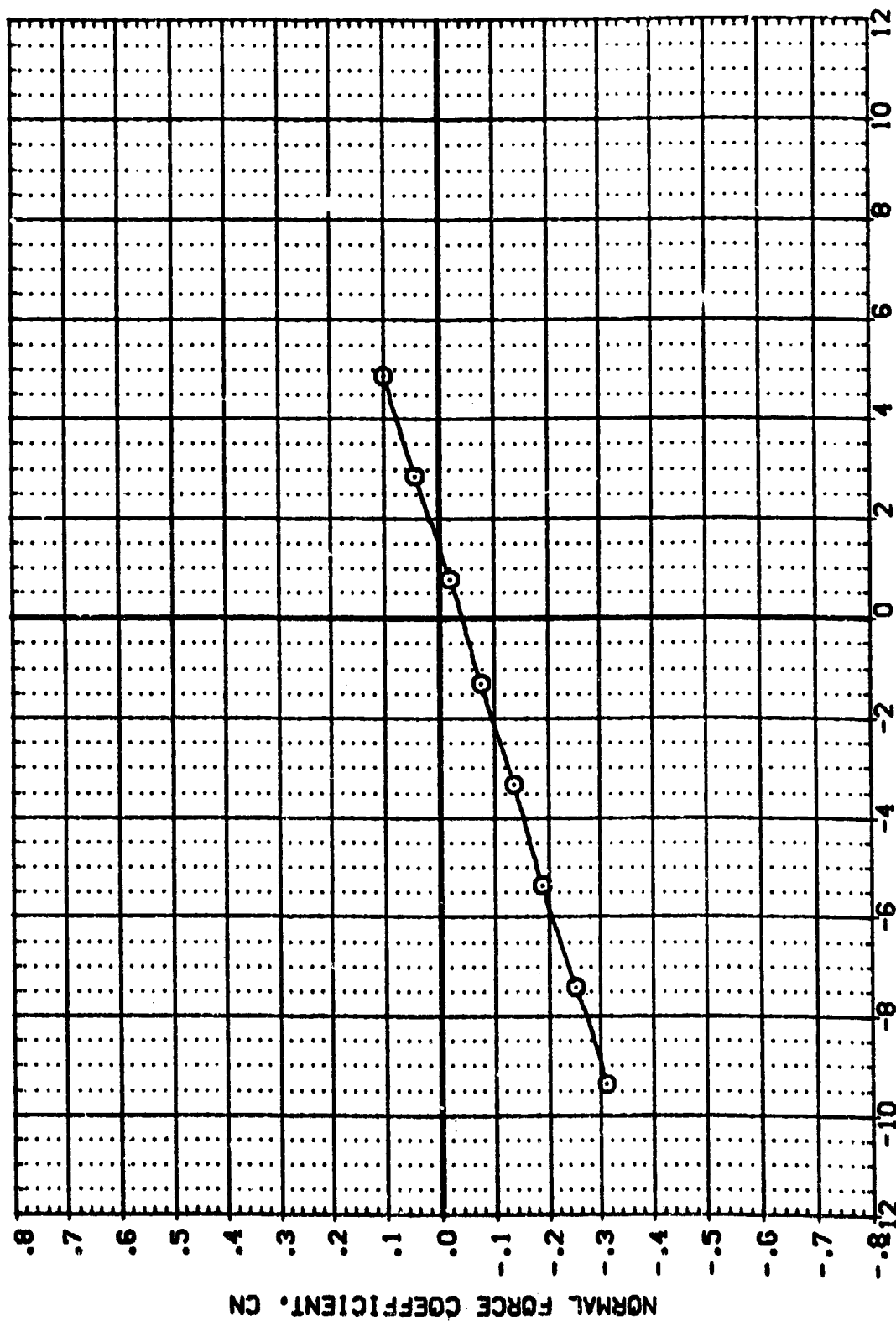
ANGLE OF ATTACK AND LONG. CHARACT. (SECOND STAGE)

```
{B}MACH = 2.99
```

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION:
 (888003) MSFC 579(1A37) (034)(114)(U7)
 (888003) DATA NOT AVAILABLE

BETA: .000
 ORIGIN: .000

REFERENCE INFORMATION
 SREF 5.1500 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



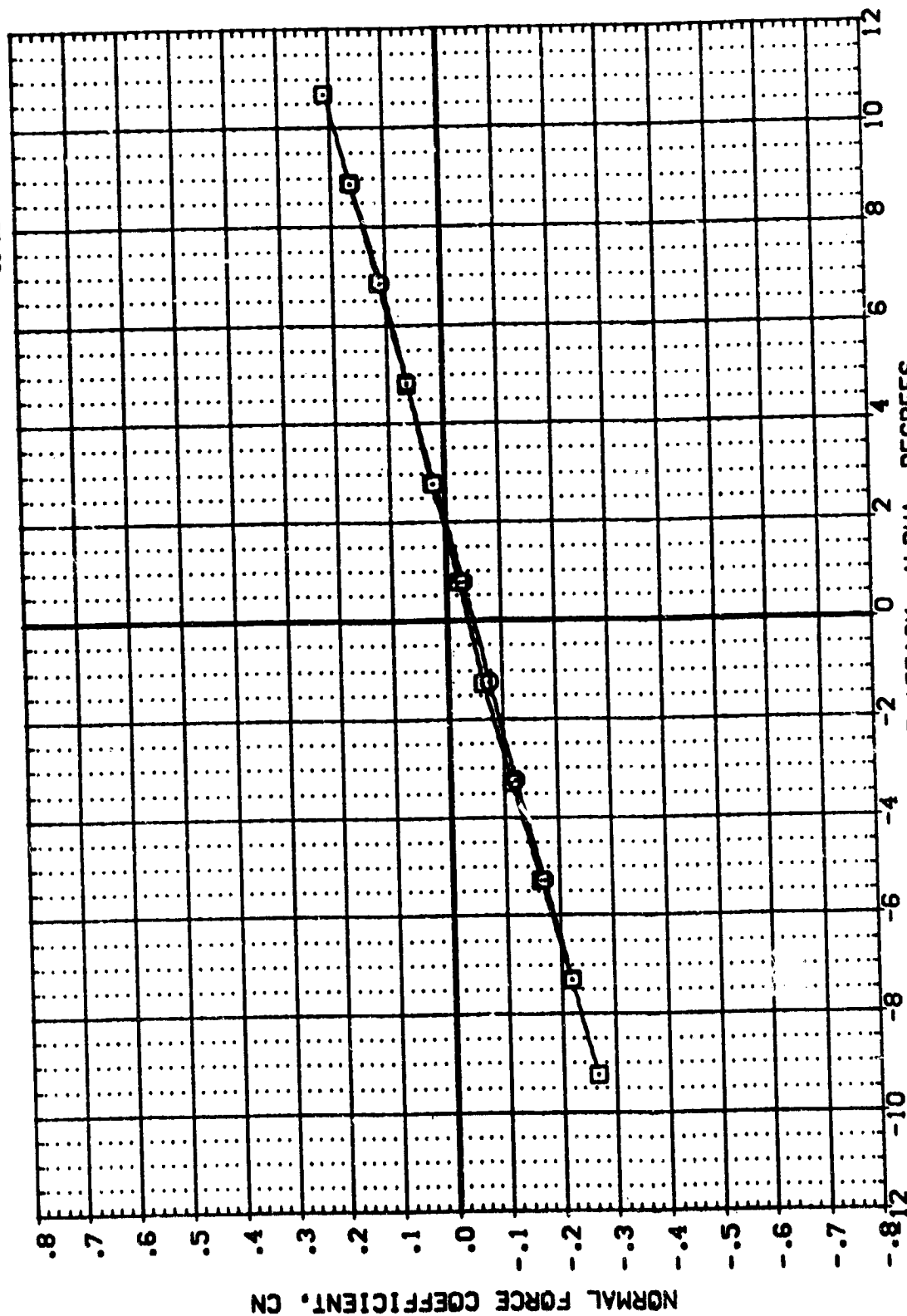
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

(C)MACH = 3.48

REFERENCE INFORMATION
 SREF 6.1963 IN.
 LREF 5.1600 IN.
 SREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0010

BETA 0.000
 ORBINC 0.000

DATA SET SYMBOL 3
 (888003)
 (888001)
 CONFIGURATION DESCRIPTION
 MSFC 579(1A37) (034)(114)(17)
 MSFC 579(1A37) (034)(17)

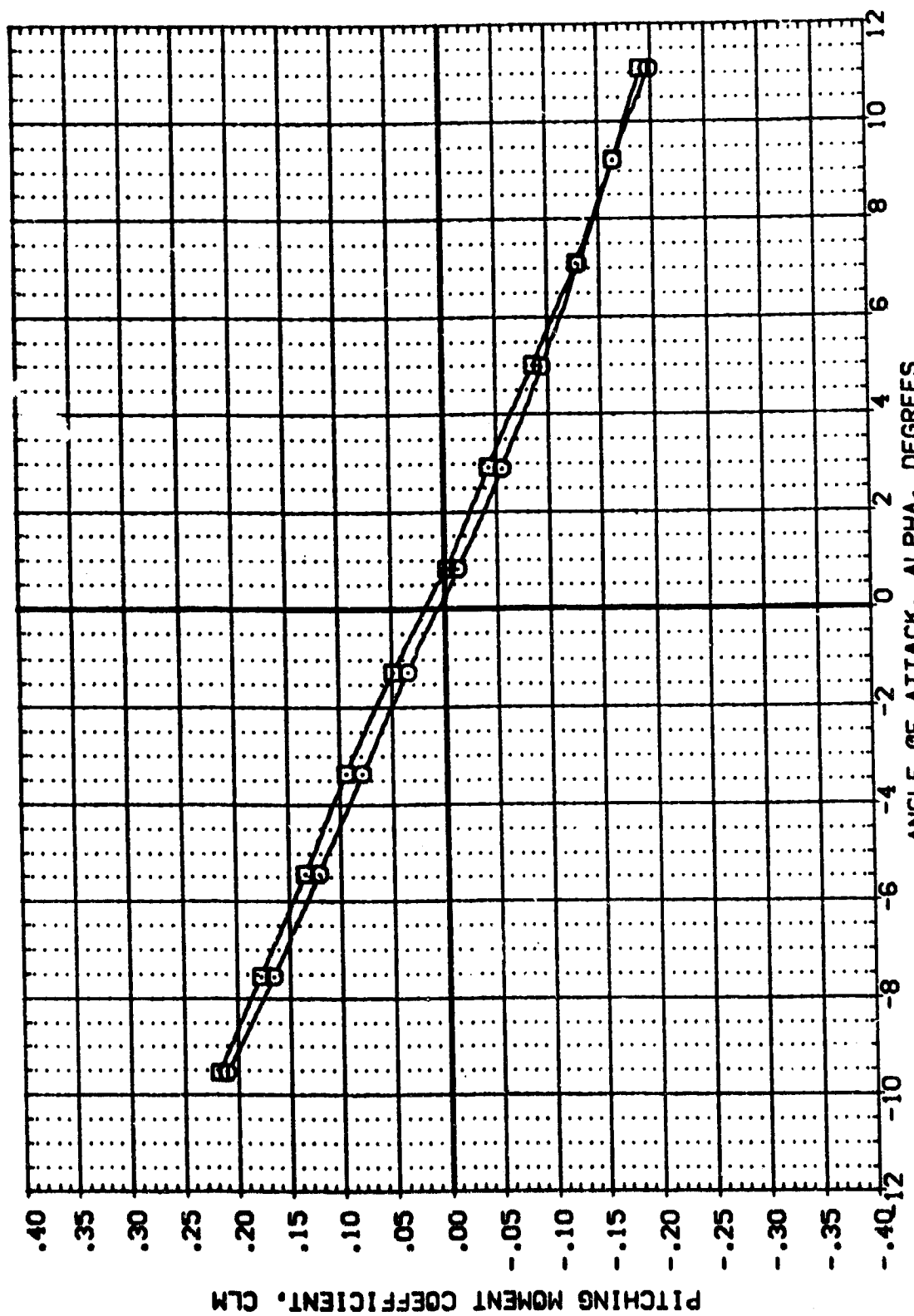


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)
 (D)MACH = 4.96
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DATA SET SYMBOL: (880003) (880001)
 CONFIGURATION DESCRIPTION: H5FC 579(1A37) (034)(114)(U7) H5FC 579(1A37) (034)(19)

BETA: .000
 ORIGIN: .000

REFERENCE INFORMATION:
 SREF: 6.1980 IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPRP: 2.7200 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

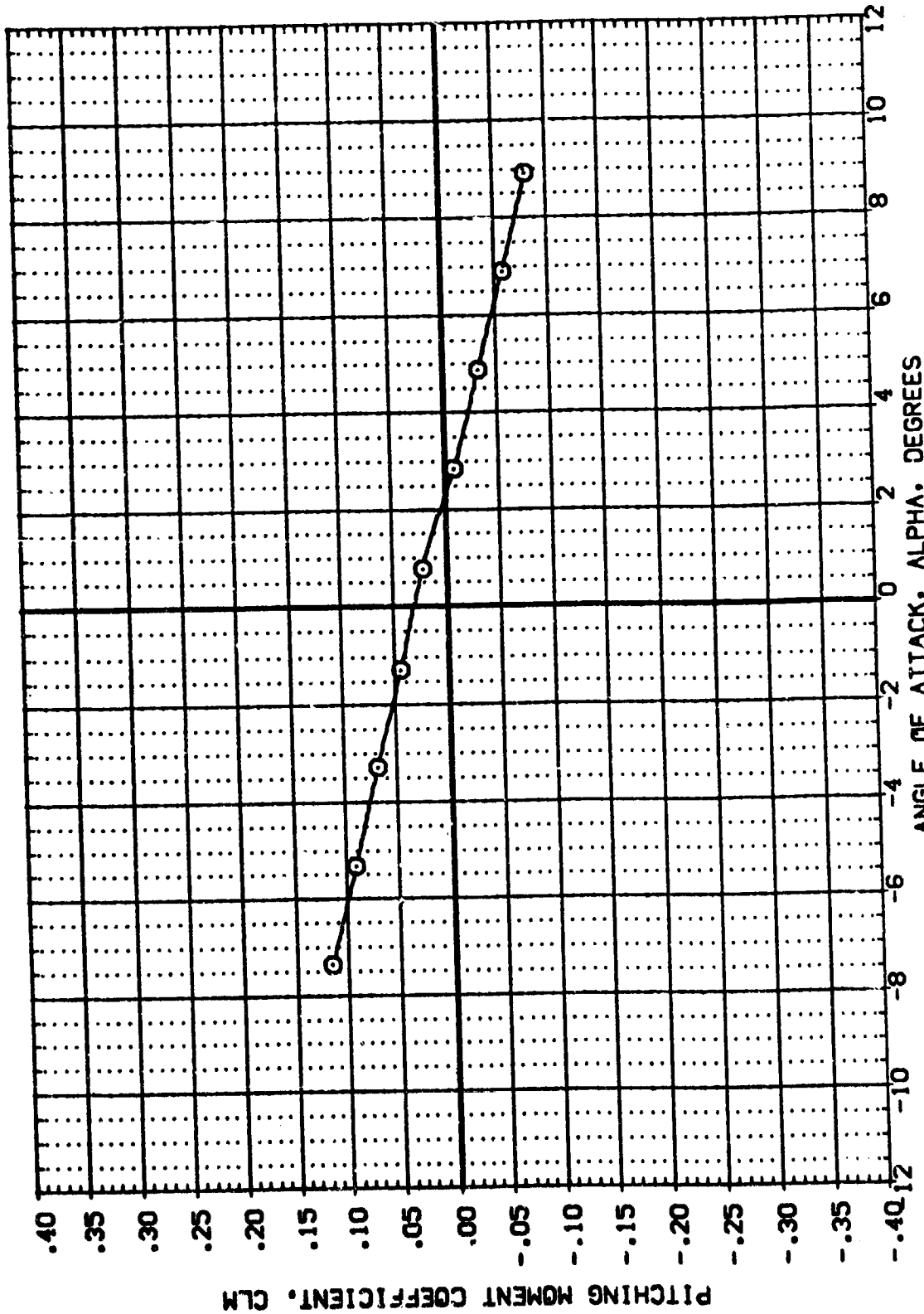
(A)MACH = 1.96



DATA SET SYMBOL: [B88003] [B88001] CONFIGURATION DESCRIPTION: MSFC 575(1A37) (034)(114)(17) DATA NOT AVAILABLE

BETA: .000 .000 ORBING: .000 .000

REFERENCE INFORMATION:
SREF: 6.1980 SQ. IN.
LREF: 5.1600 IN.
BREF: 5.1600 IN.
XPRP: 2.7200 IN.
YPRP: .0000 IN.
ZPRP: .0000 IN.
SCALE: .0010



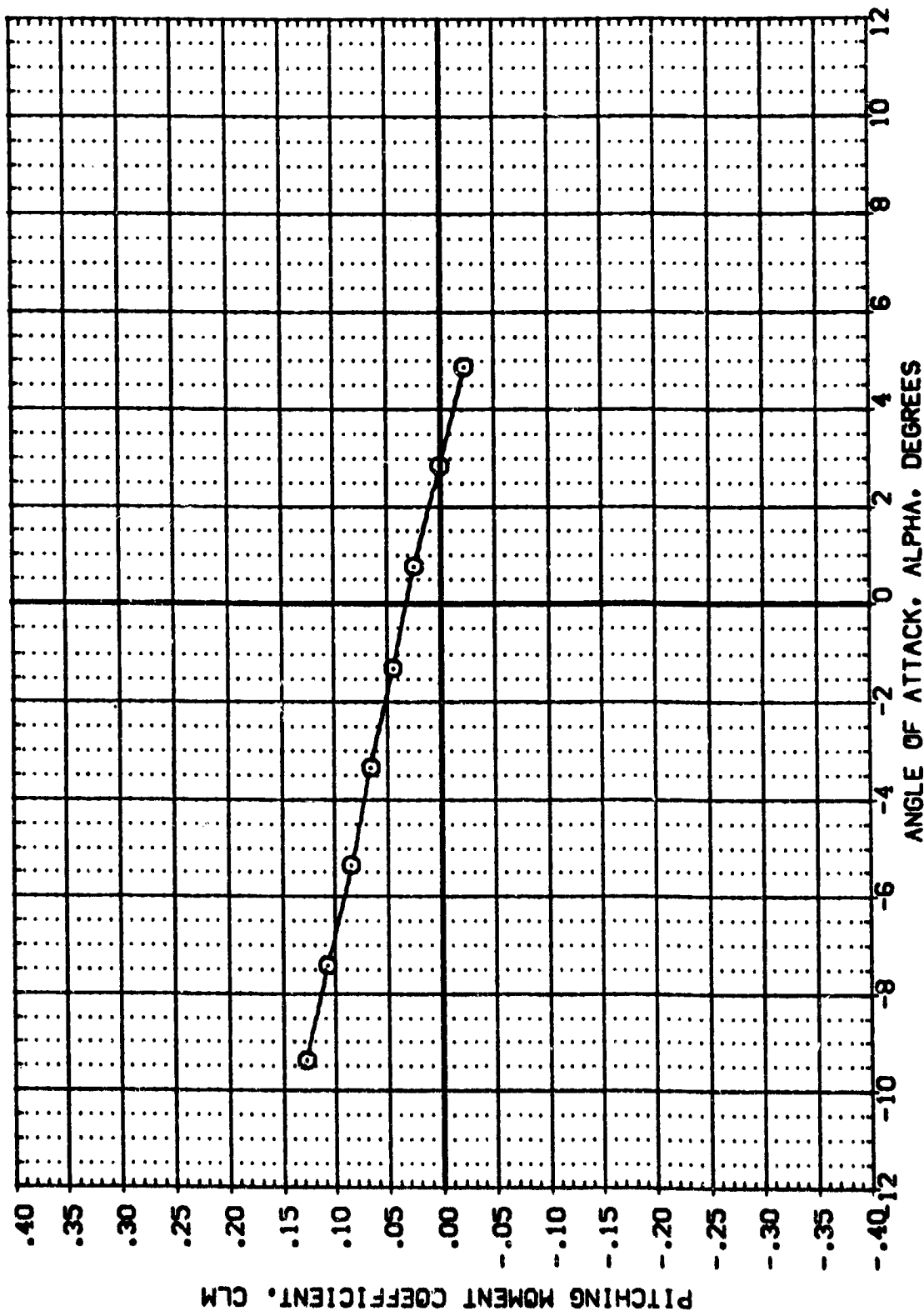
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(SECOND STAGE)

(B)MACH = 2.99

DATA SET SYMBOL: (880003) 9 MSFC 575(1A37) (03M)(114)(U7)
 (880001) DATA NOT AVAILABLE

BETA: .000
 ORIGIN: .000

REFERENCE INFORMATION:
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040



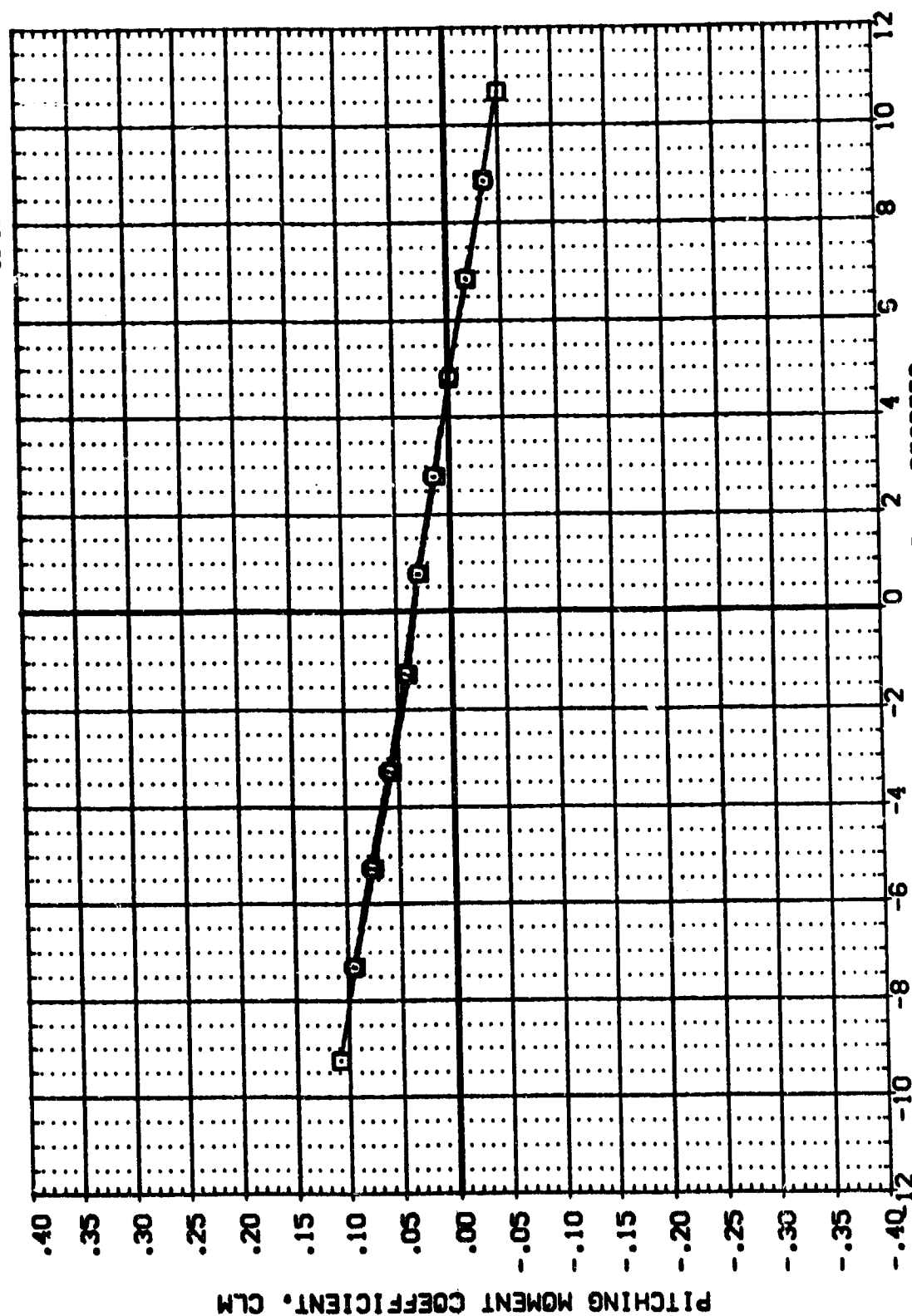
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(SECOND STAGE)

(C)MACH = 3.48

REFERENCE INFORMATION
 REF 6.1880 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

BETA .000
 OBLINC .000

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (B88003) HSC 578 (A37) (004) (14) (U7)
 (B88001) HSC 578 (A37) (004) (19)



ANGLE OF ATTACK. ALPHA. DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

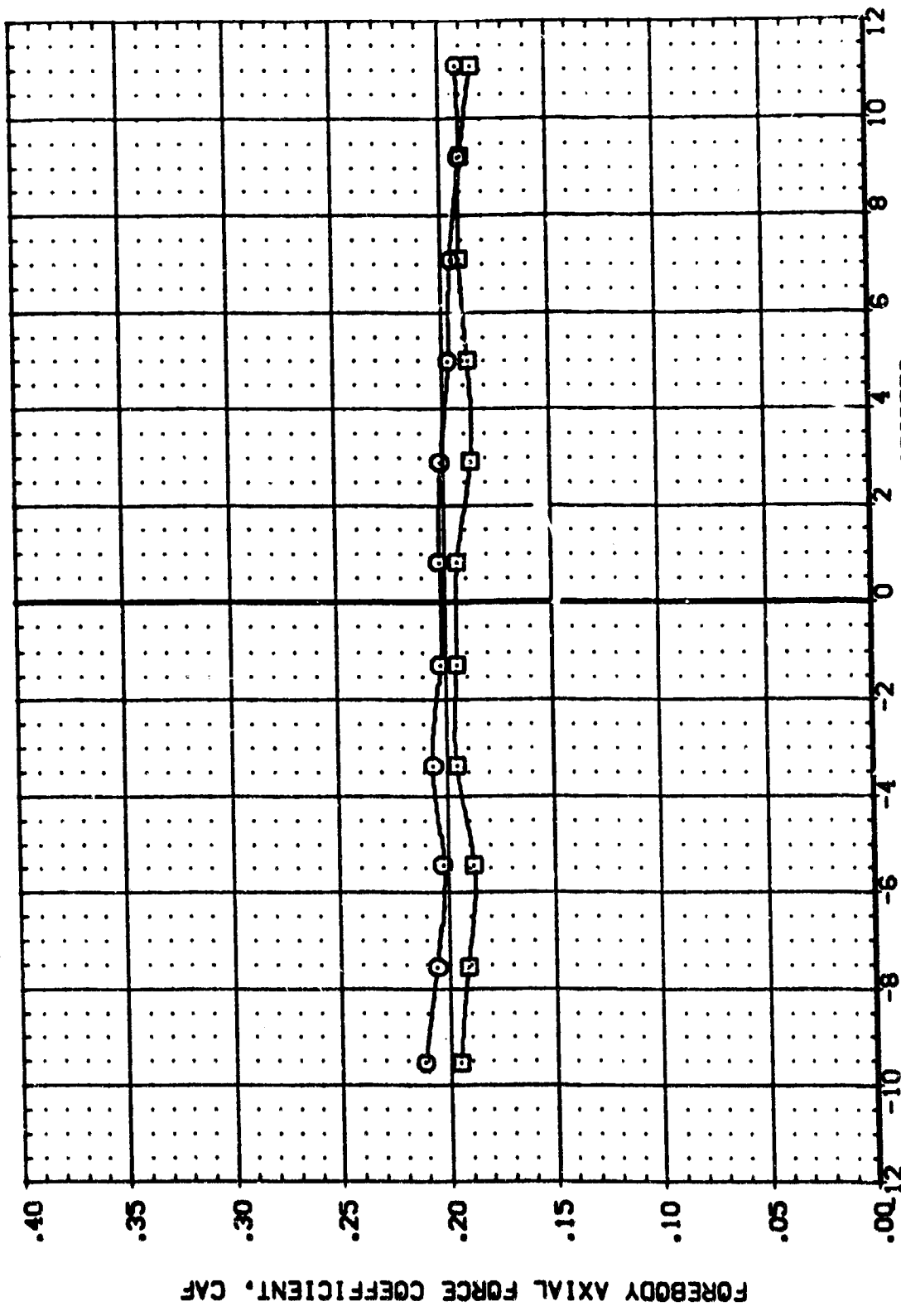
PAGE 155

(O)MACH = 4.96

REFERENCE INFORMATION
 REF 6.1580 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

BETA .000
 ORBING .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888003) HSC 579(1A37) (034)(T14)(U7)
 (888001) HSC 579(1A37) (034)(T9)

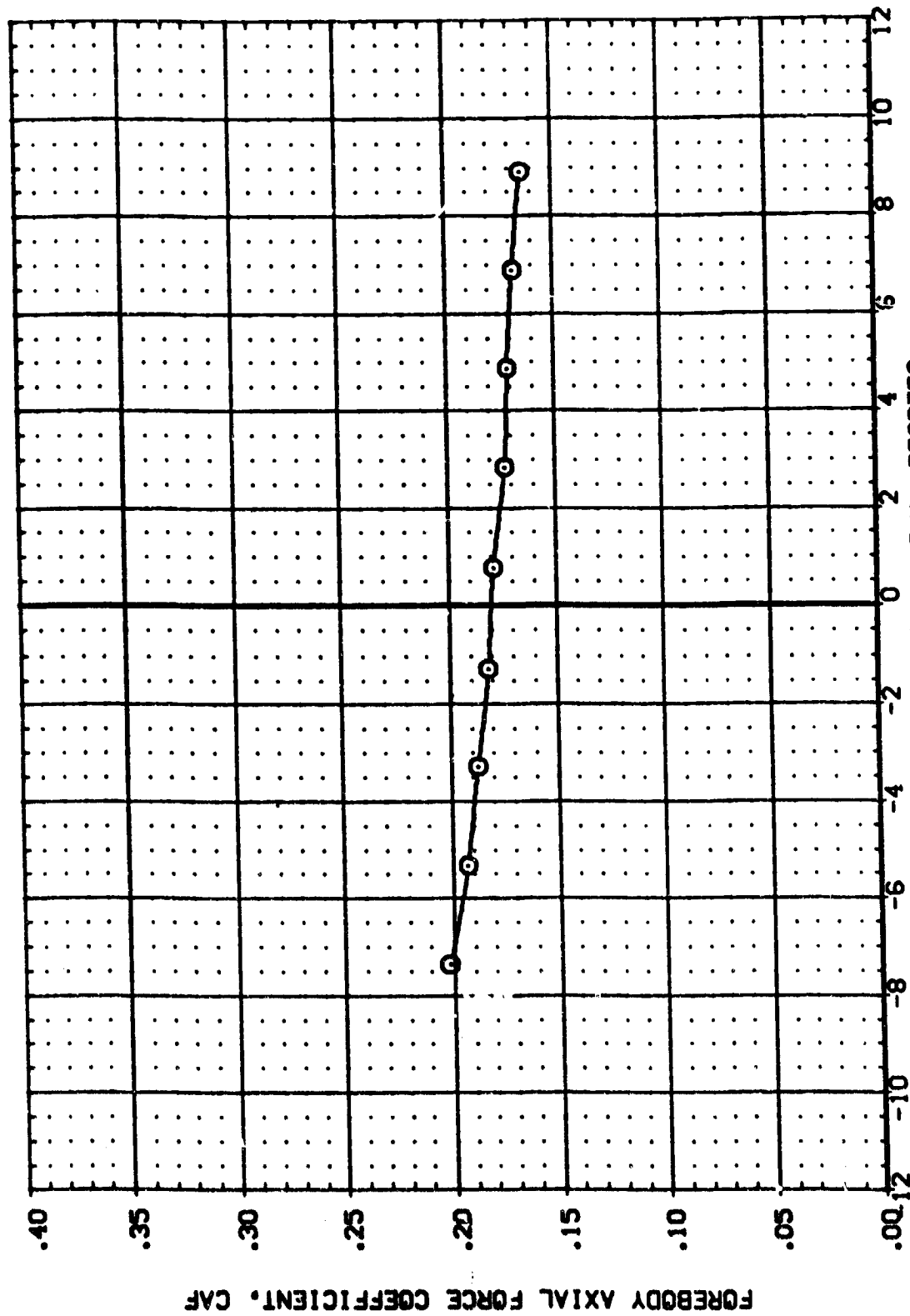


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)
 (A)MACH = 1.96
 PAGE 156

DATA SET SYMBOL: MSFC 579(1A37) (034)(114)(107)
 (888003) DATA NOT AVAILABLE
 (888001)

BETA: .000
 CRIBING: .000

REFERENCE INFORMATION
 REF: 6.1800 90. IN.
 LIFE: 5.1800 IN.
 REF: 5.1800 IN.
 XREF: 2.7700 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0040

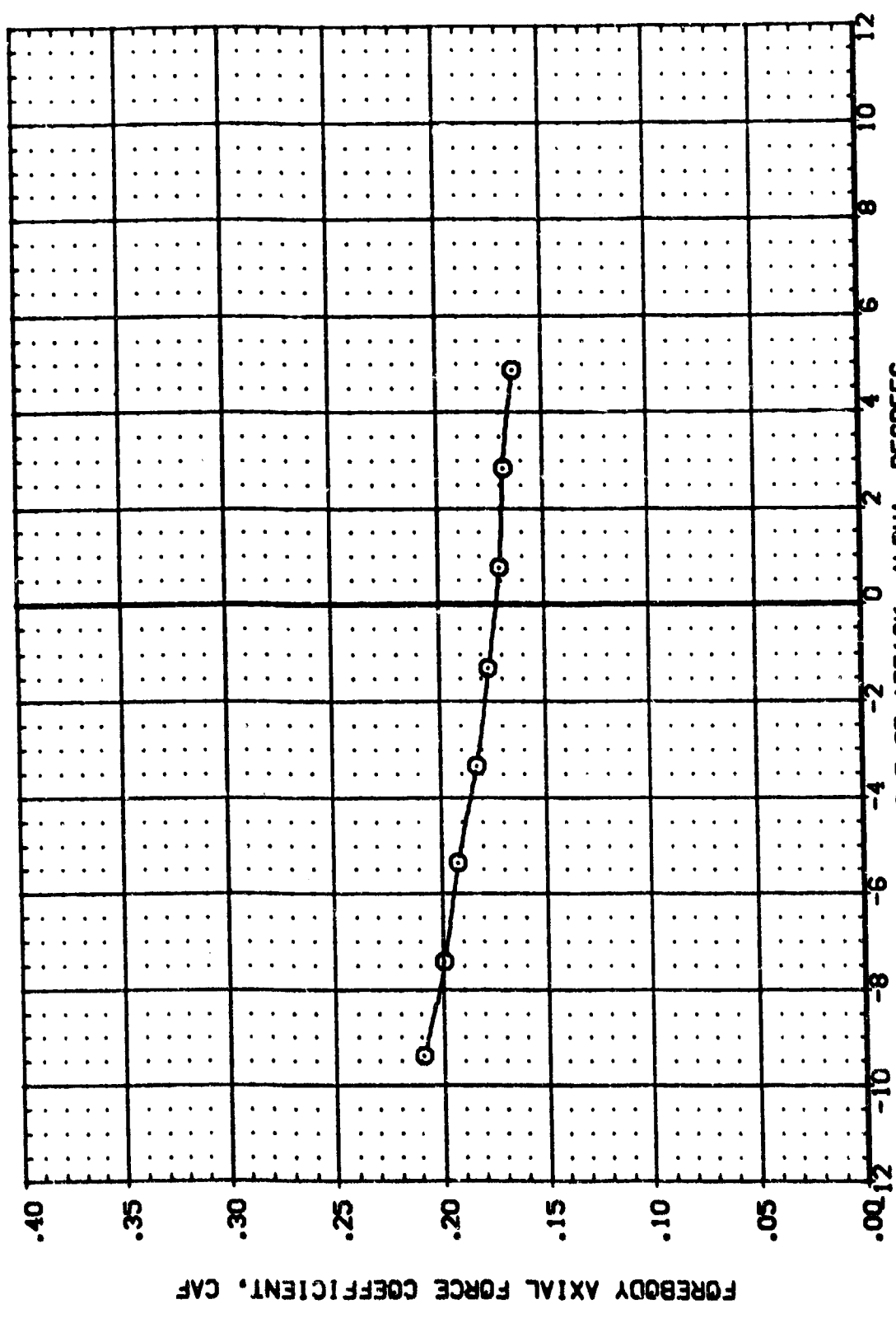


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

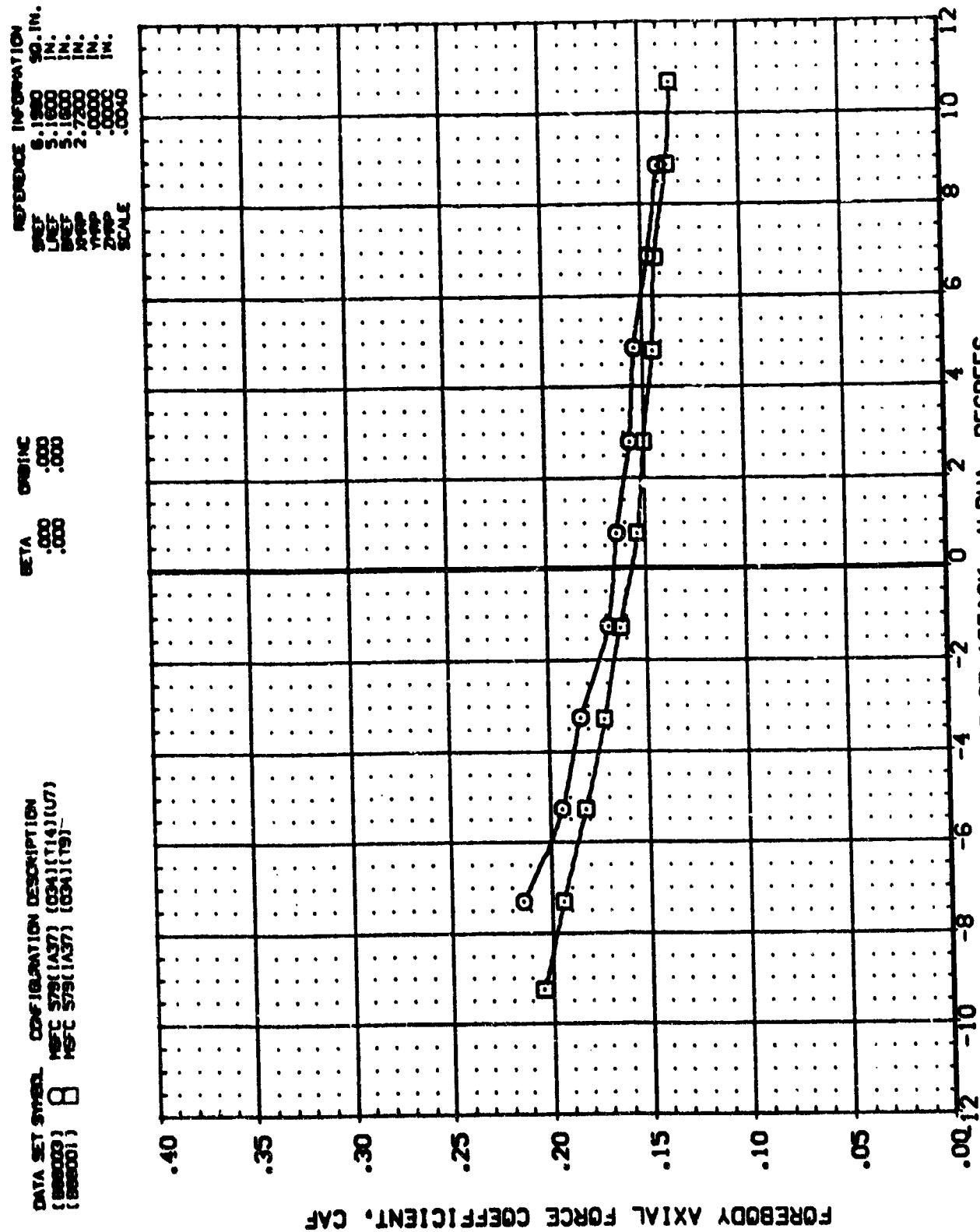
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888003) 8 N8FC 579(1A37) (024)(T14)(U7)
 (888001) DATA NOT AVAILABLE

BETA 0.000 0.000
 0.000 0.000

REFERENCE INFORMATION
 SREF 5.1880 50. IN.
 LREF 5.1800 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

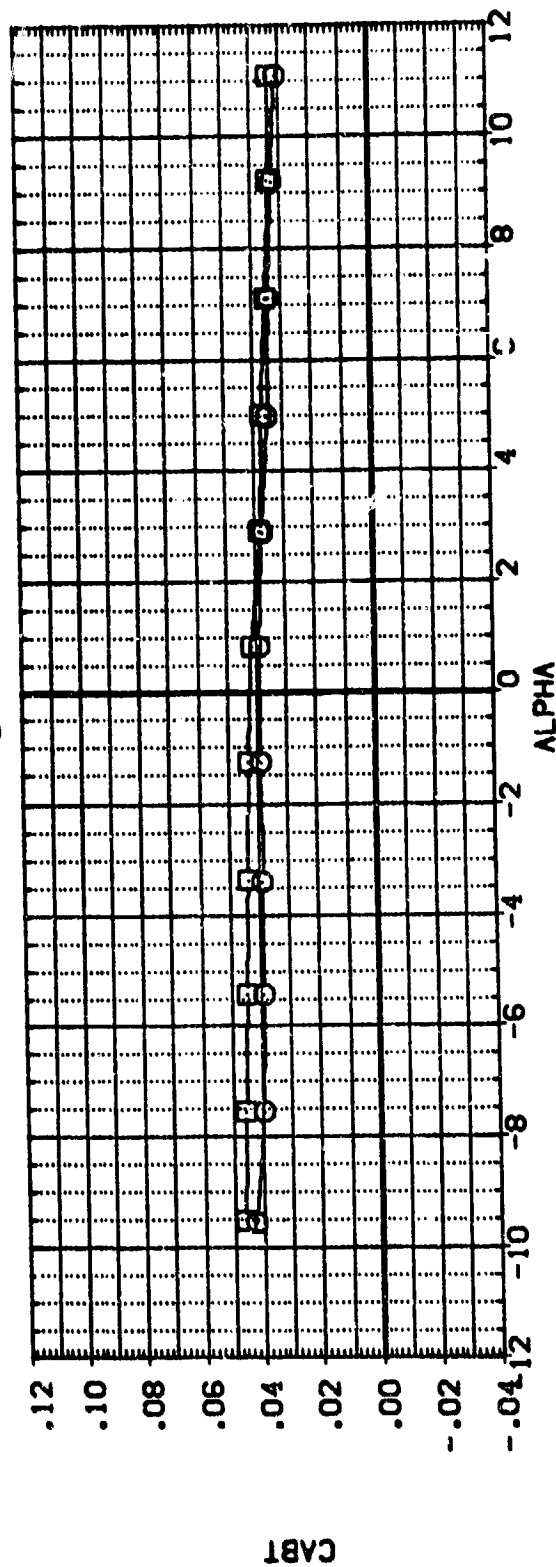
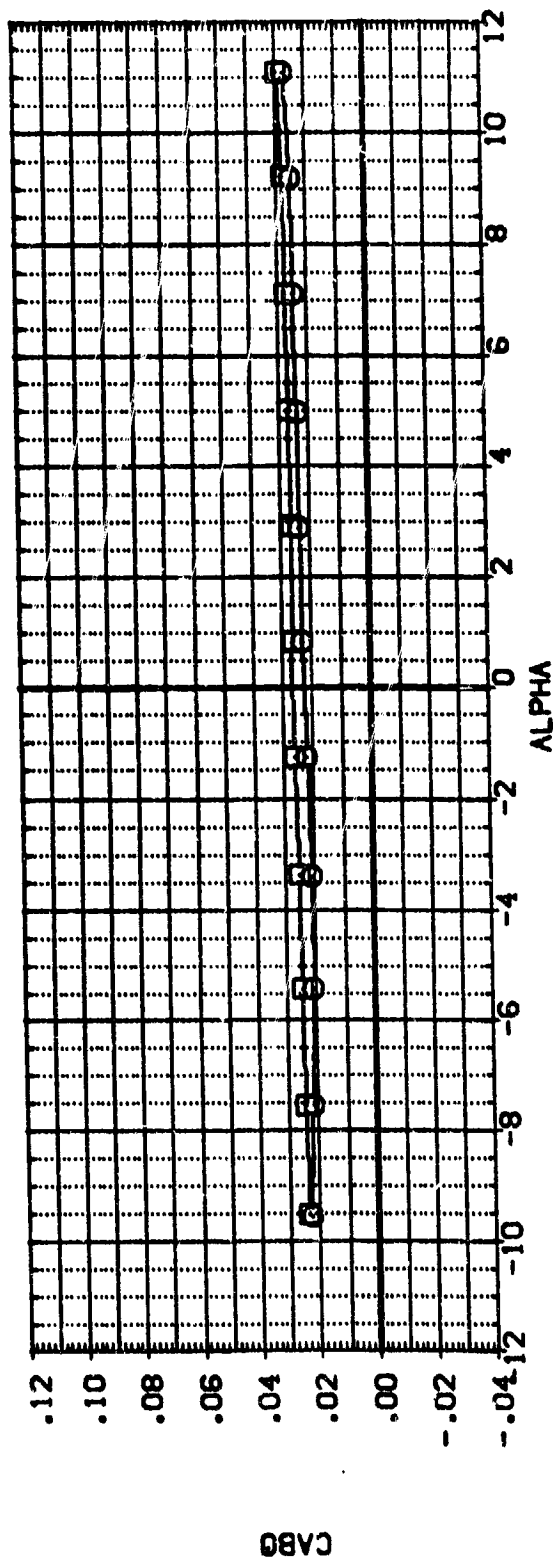


DATA SET SWFTL
(888003)
(888001)

CONFIGURATION DESCRIPTION
MSFC 579(A37) (034)(T14)(U7)
MSFC 579(A37) (034)(T9)

BETA 0.000
0.000
0.000

REFERENCE INFORMATION
SREF 6.1900 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACTER (SECOND STAGE)

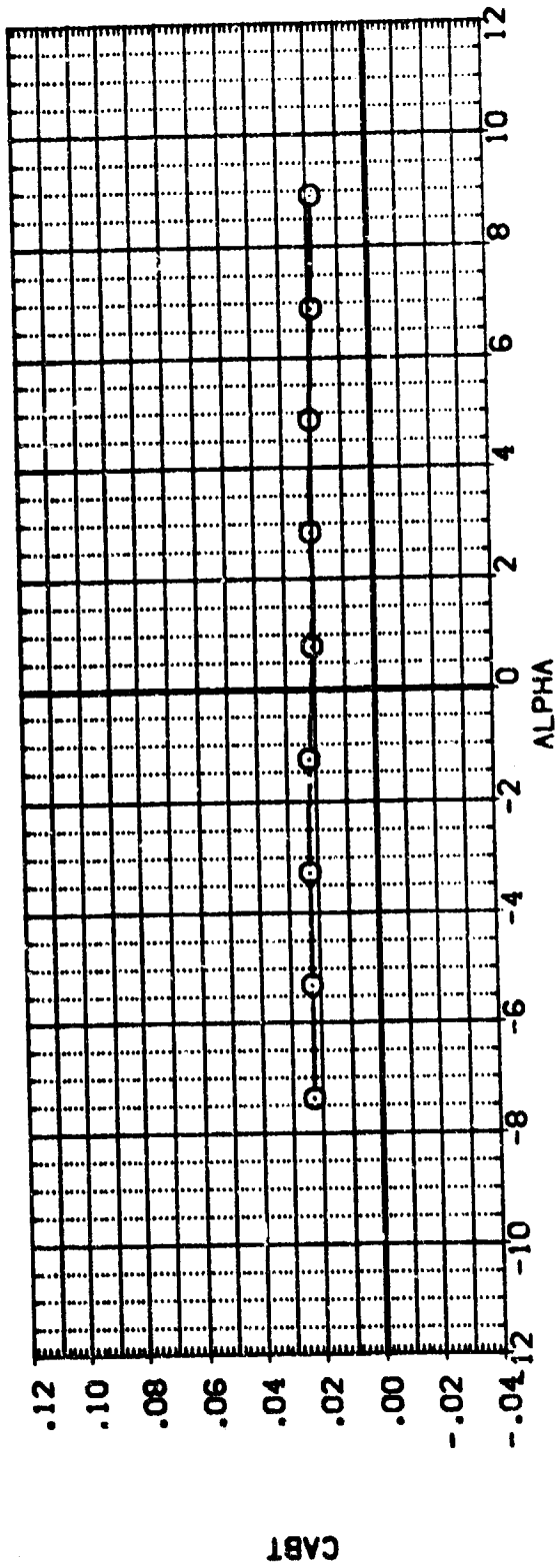
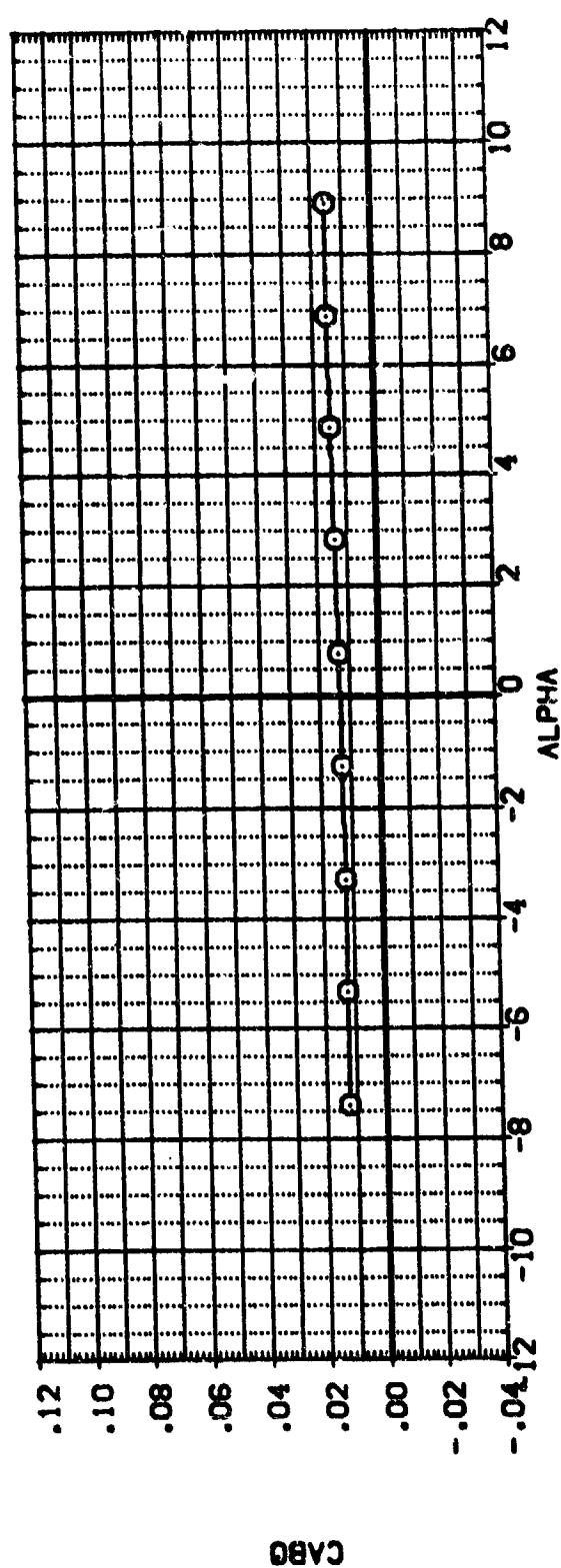
(A)MACH = 1.96



DATA SET SYMBOL: 1880003
CONFIGURATION DESCRIPTION: HSC 579(1427) (034)(114)(U7)
DATA NOT AVAILABLE

BETA: .000
ORBIT: .000

REFERENCE INFORMATION:
SREF: 5.1500 IN.
LREF: 5.1500 IN.
BREF: 5.1500 IN.
XREF: 2.7200 IN.
YREF: .0000 IN.
ZREF: .0000 IN.
SCALE: .0040



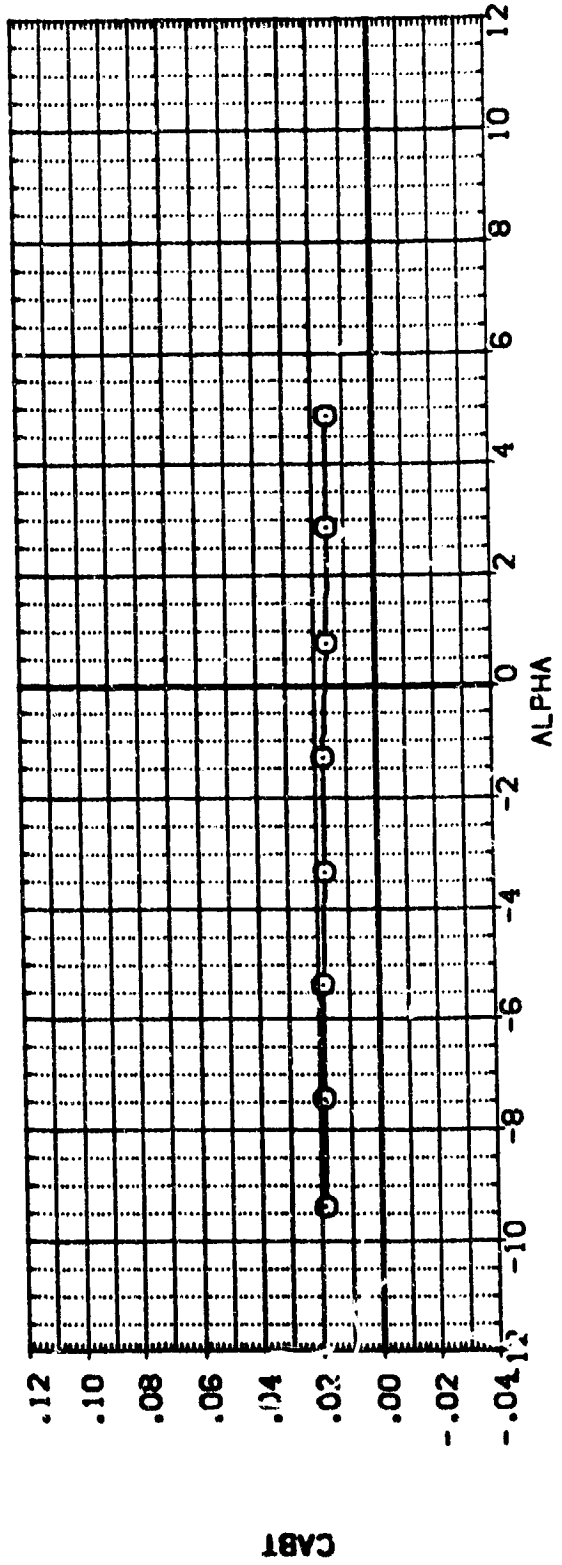
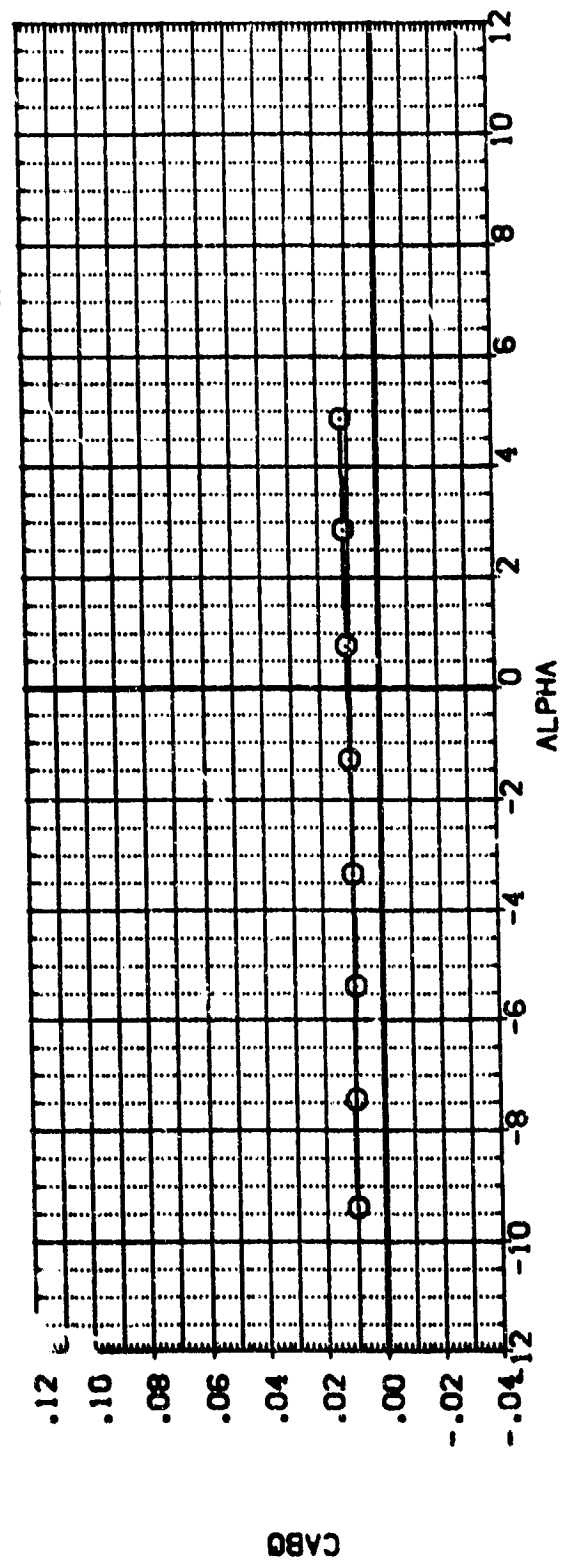
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

(B)MACH = 2.99

DATA SET SYMBOL: (888003)
 CONFIGURATION DESCRIPTION: MSFC 575(1A37) (03A)(114)(U7)
 DATA NOT AVAILABLE

BETA: .000
 ORBINE: .000

REFERENCE INFORMATION:
 SREF: 6.1980 IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPROP: 2.7200 IN.
 YPROP: .0000 IN.
 ZPROP: .0000 IN.
 SCALE: .0040



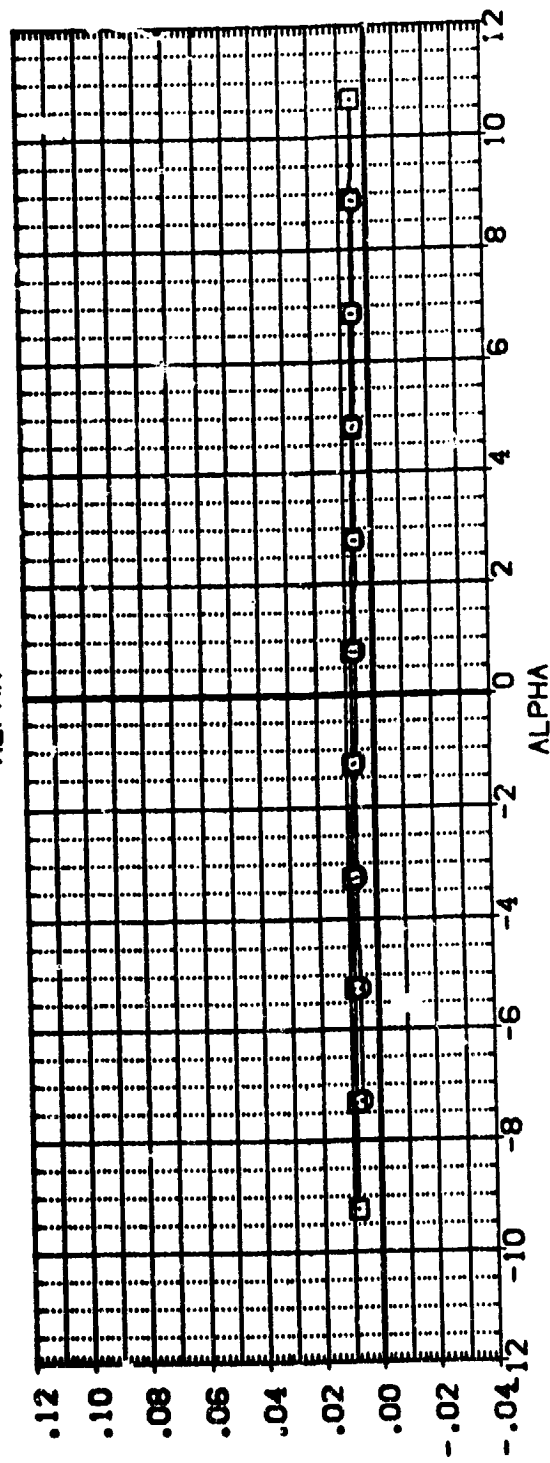
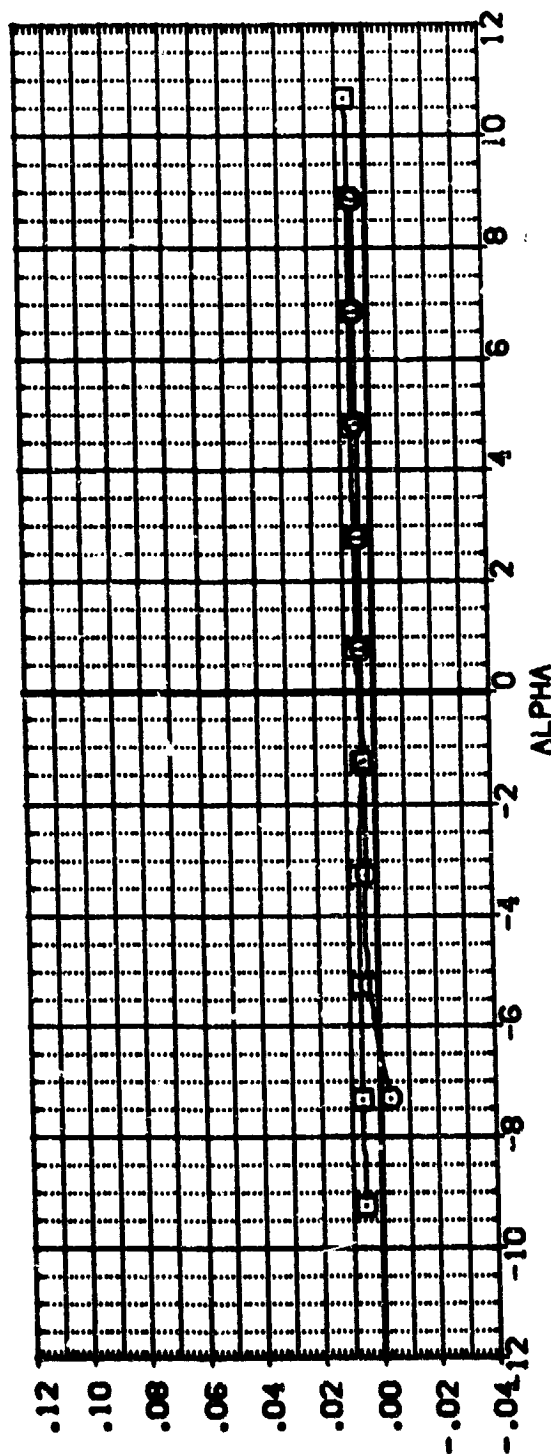
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCE ON LONG CHARACTER (SECOND STAGE)

(C)MACH = 3.48

DATA SET 5980. CONFIGURATION DESCRIPTION
 (598000) } B HPFC 575(1A37) (CON)(T14)(U7)
 (598001) } HPFC 575(1A37) (CON)(T15)

BETA 0.000
 0.000

REFERENCE INFORMATION
 SREF 6.1800 90. IN.
 LREF 5.1670 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040



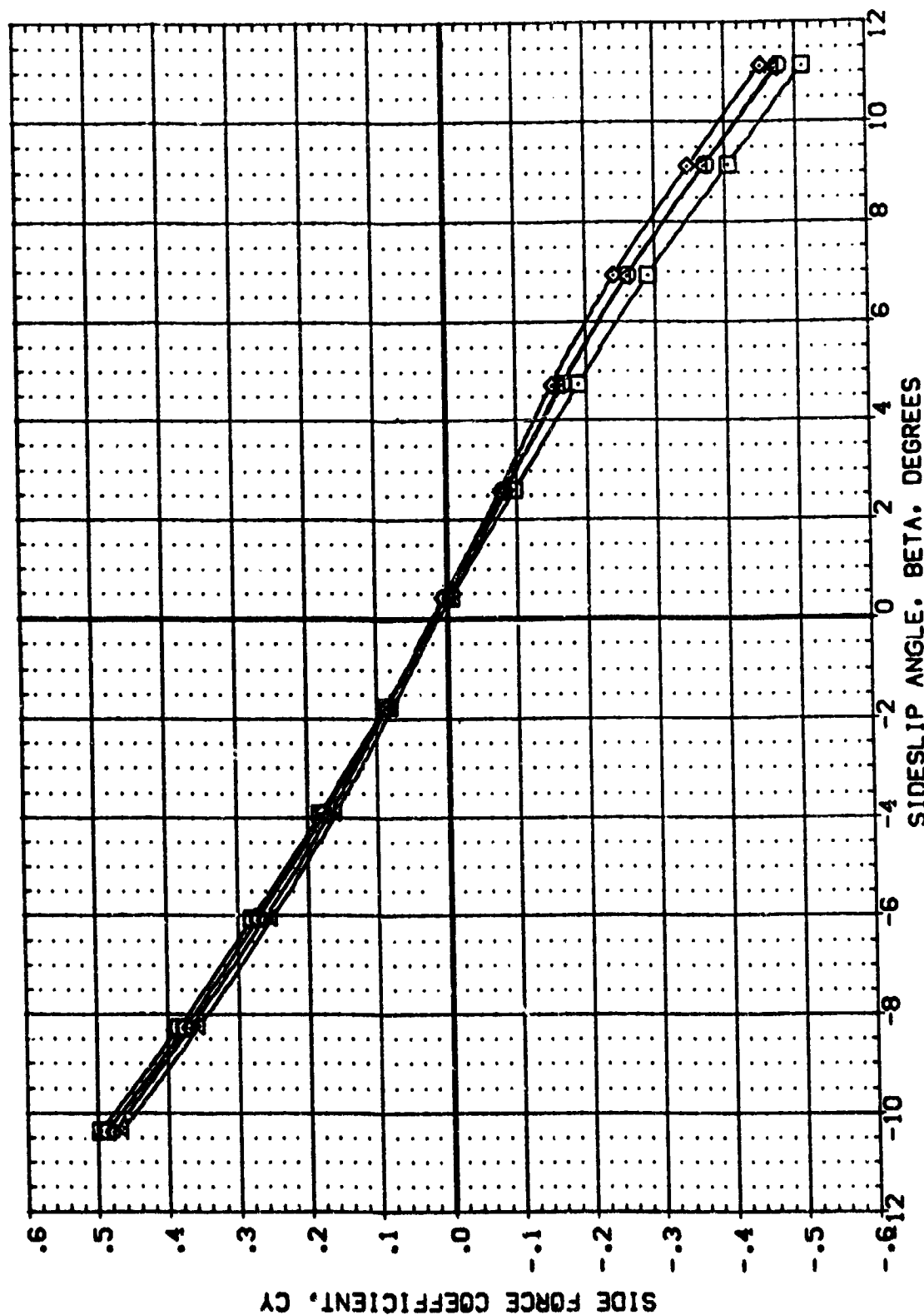
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

(D)MACH = 4.96

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 ZREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

ALPHA 0.000
 ORBINC 0.000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888005) HFC 579(1A37) (034)(114)(107)
 (888006) HFC 579(1A37) (034)(114)(107)
 (888007) HFC 579(1A37) (034)(114)(107)
 (888008) HFC 579(1A37) (034)(114)(107)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (SECOND STAGE)

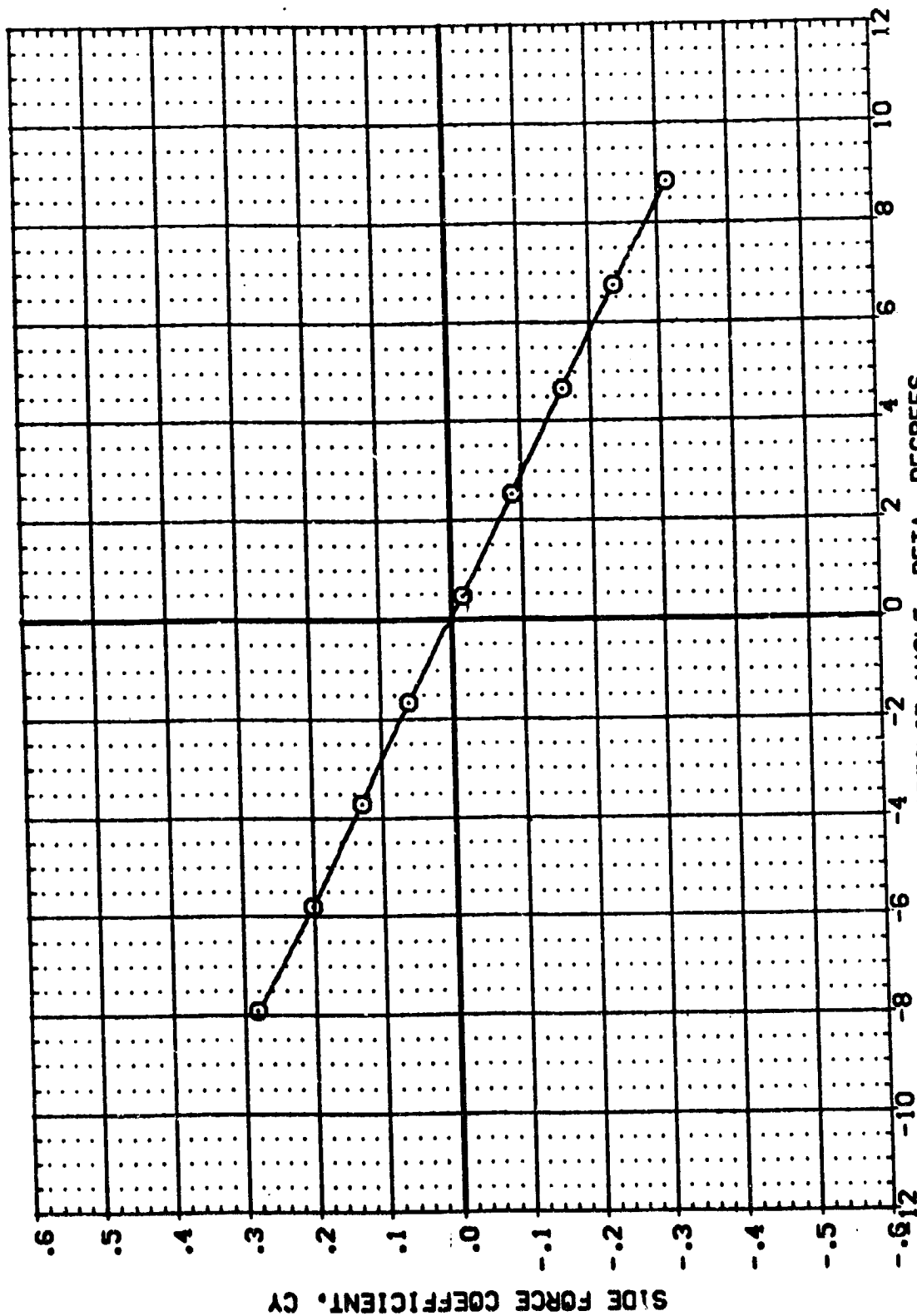
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(A)MACH = 1.96

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 -5.000
 5.000
 0.000

DATA SET SYMBL. CONFIGURATION DESCRIPTION
 (888005) H8FC 575(HA37) (G24)(T14)(U7)
 (888006) DATA NOT AVAILABLE
 (888007) DATA NOT AVAILABLE
 (888008) DATA NOT AVAILABLE
 (888009) DATA NOT AVAILABLE

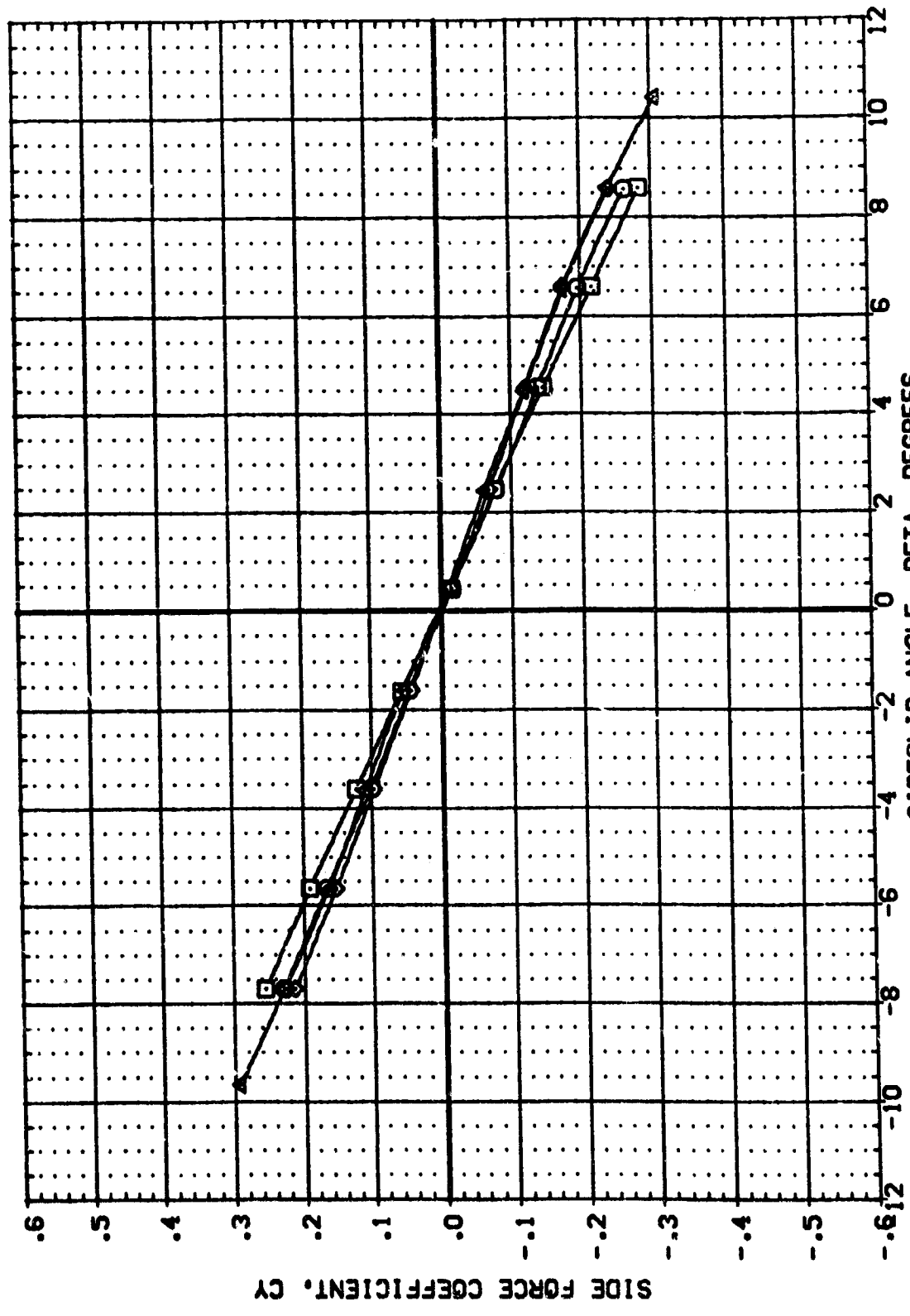


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (8888 35) HFC 579(1A37) (034)(114)(107)
 (8888 36) HFC 579(1A37) (034)(114)(107)
 (8888 37) HFC 579(1A37) (034)(114)(107)
 (8888 38) HFC 579(1A37) (034)(114)(107)

ALPHA DB/INC
 .000 .000
 -.000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1990 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)

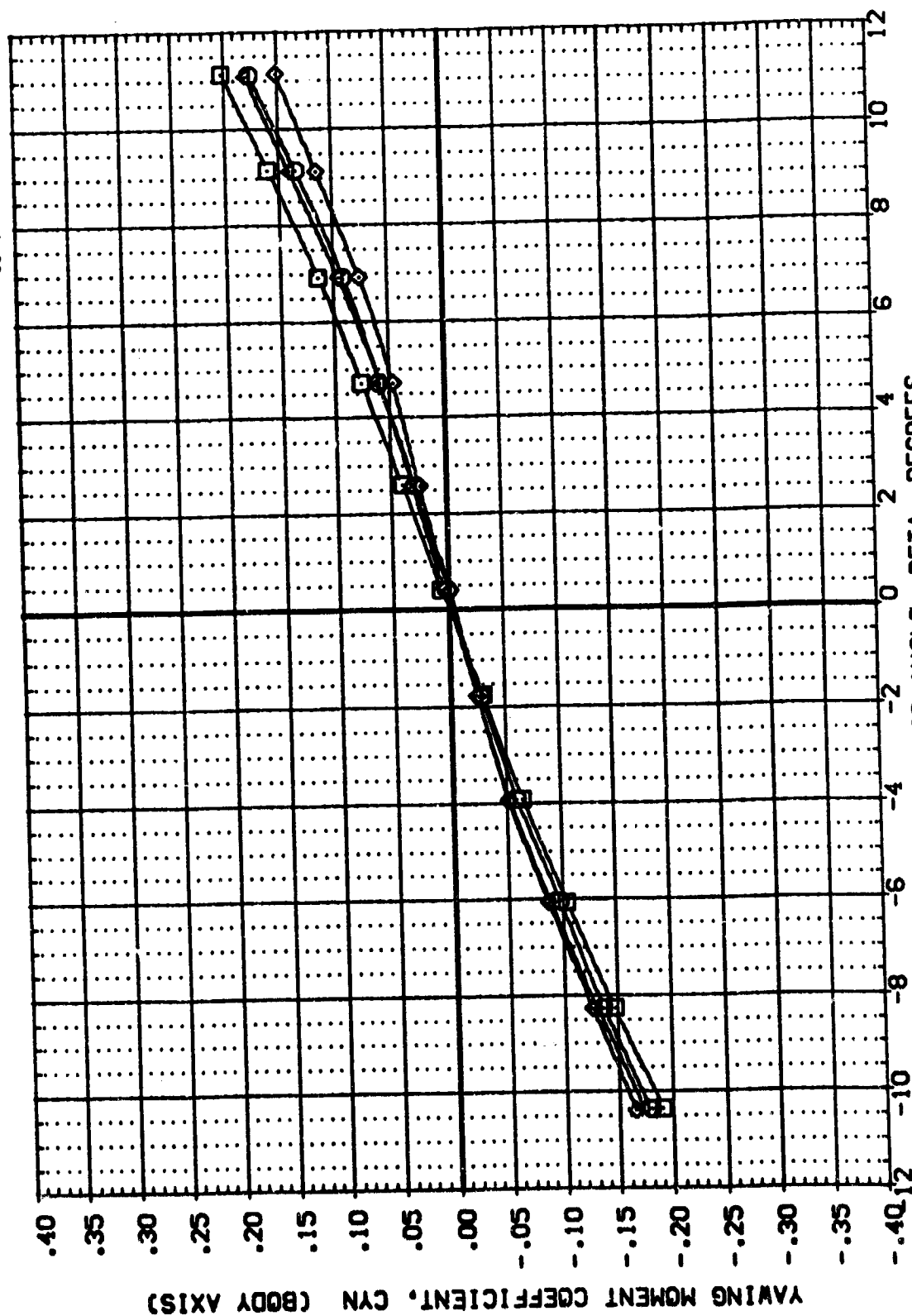
(C)MACH = 4.96



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 [888005] [888005] HSFC 573(A37) (034)(T14)(U7)
 [888004] [888004] HSFC 573(A37) (034)(T14)(U7)
 [888006] [888006] HSFC 573(A37) (034)(T14)(U7)
 [888002] [888002] HSFC 573(A37) (034)(T9)

ALPHA 0.000
 0.000
 -5.000
 -5.000

REFERENCE INFORMATION
 REF 6.1500 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040



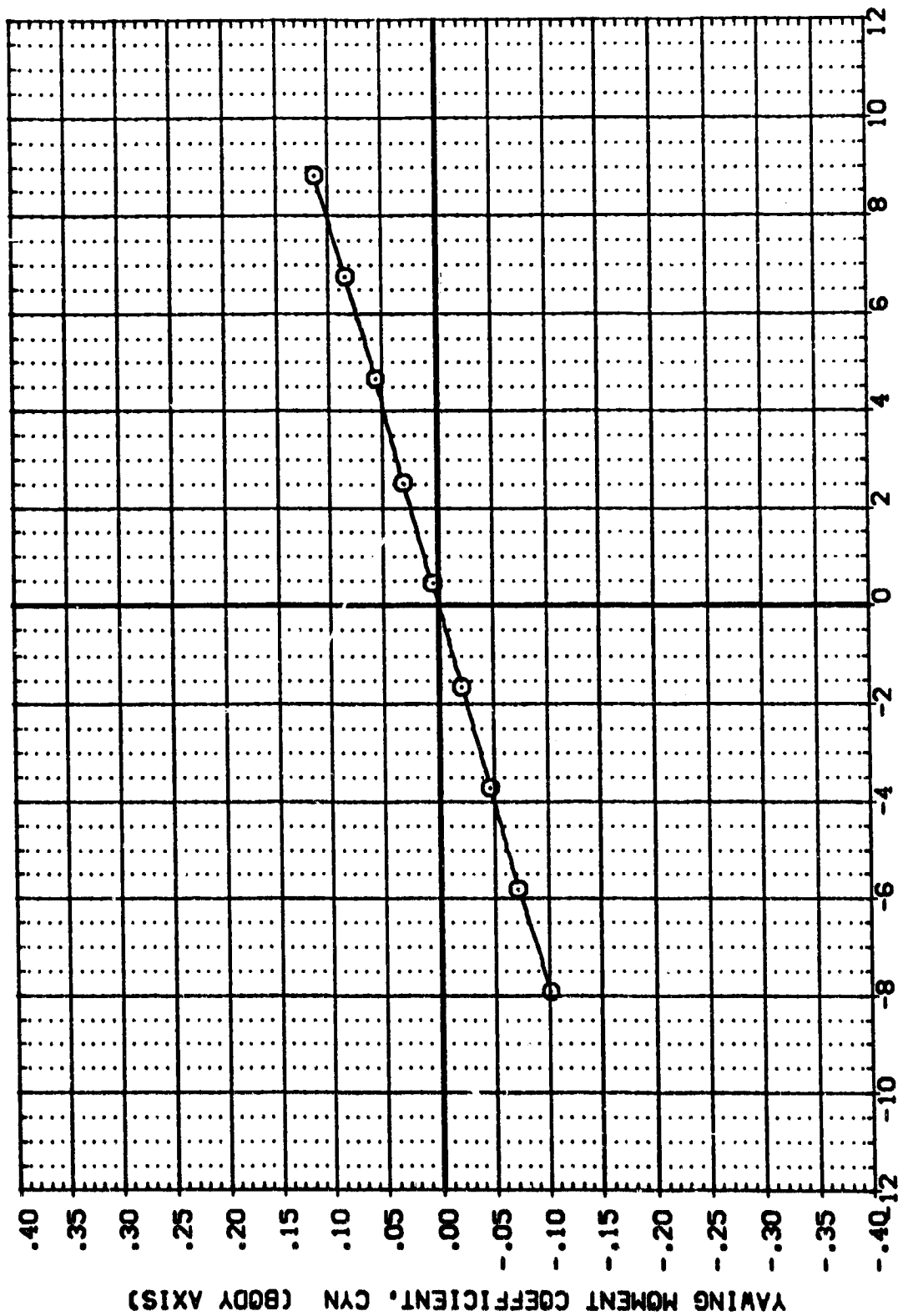
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)

(A)MACH = 1.96

DATA SET SYMBOL:  CONFIGURATION DESCRIPTION:
 (888005) HSFC 579(1A37) (034)(T14)(U7)
 (888004) DATA NOT AVAILABLE
 (888003) DATA NOT AVAILABLE
 (888002) DATA NOT AVAILABLE

ALPHA: 0.000
 CRIBING: 0.000
 -3.000
 5.000
 0.000

REFERENCE INFORMATION:
 SREF: 6.1980 IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XREF: 2.7200 IN.
 YREF: 0.0000 IN.
 ZREF: 0.0000 IN.
 SCALE: .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)

(B)MACH = 3.48

DATA SET SYMBOL CONFIGURATION DESCRIPTION

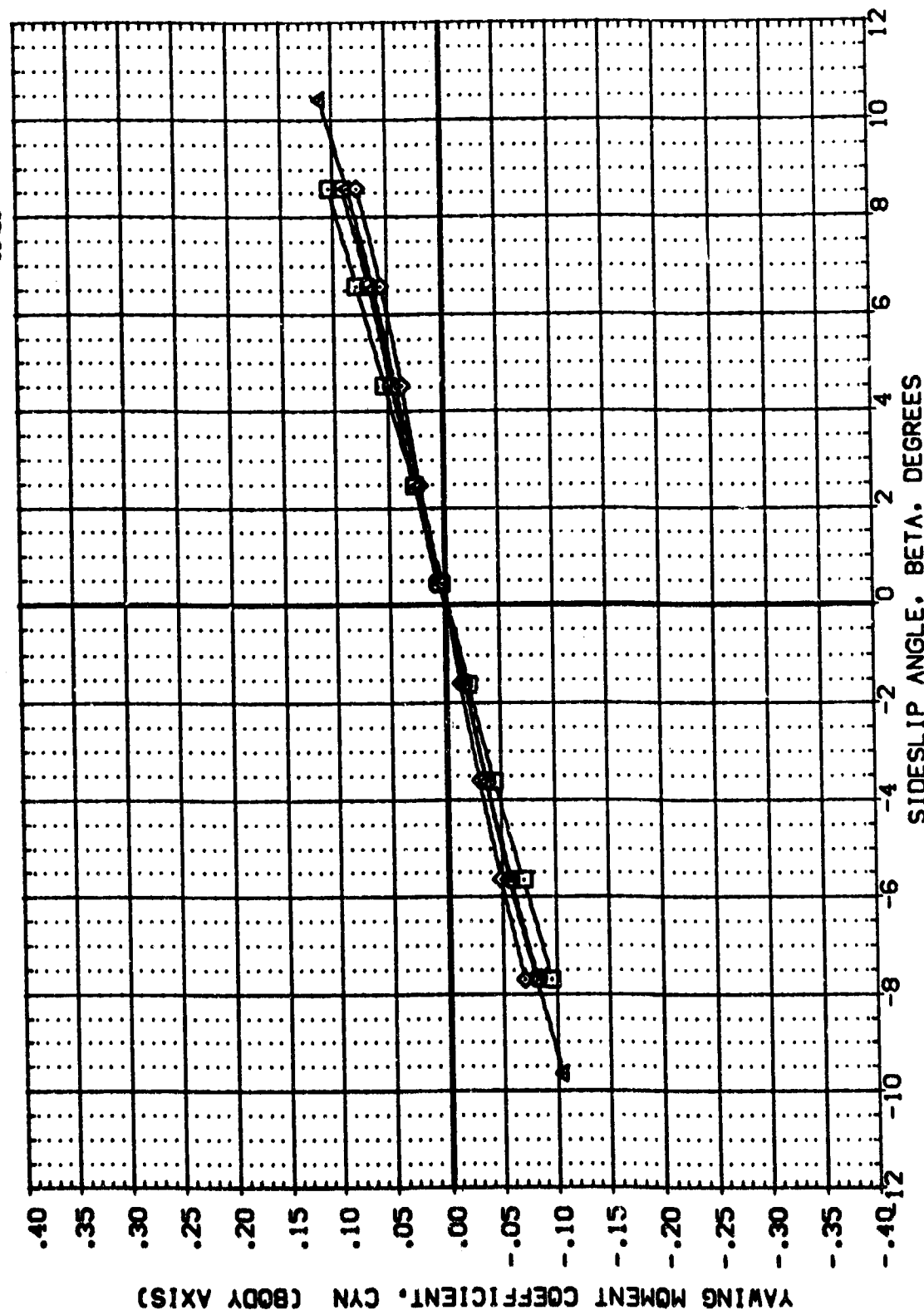
880003	HSFC 5781(A37)	(034)(T14)(U7)
880004	HSFC 5781(A37)	(034)(T14)(U7)
880005	HSFC 5781(A37)	(034)(T14)(U7)
880006	HSFC 5781(A37)	(034)(T14)(U7)

ALPHA 0.000
-5.000
5.000

BETA 0.000
0.000
0.000

REFERENCE INFORMATION

REF	5.1580	50. IN.
REF	5.1580	IN.
REF	5.1580	IN.
REF	2.7200	IN.
REF	.0000	IN.
REF	.0000	IN.
REF	.0040	IN.
SCALE		



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (SECOND STAGE)

(C)MACH = 4.96

DATA SET SYMBOL CONFIGURATION DESCRIPTION

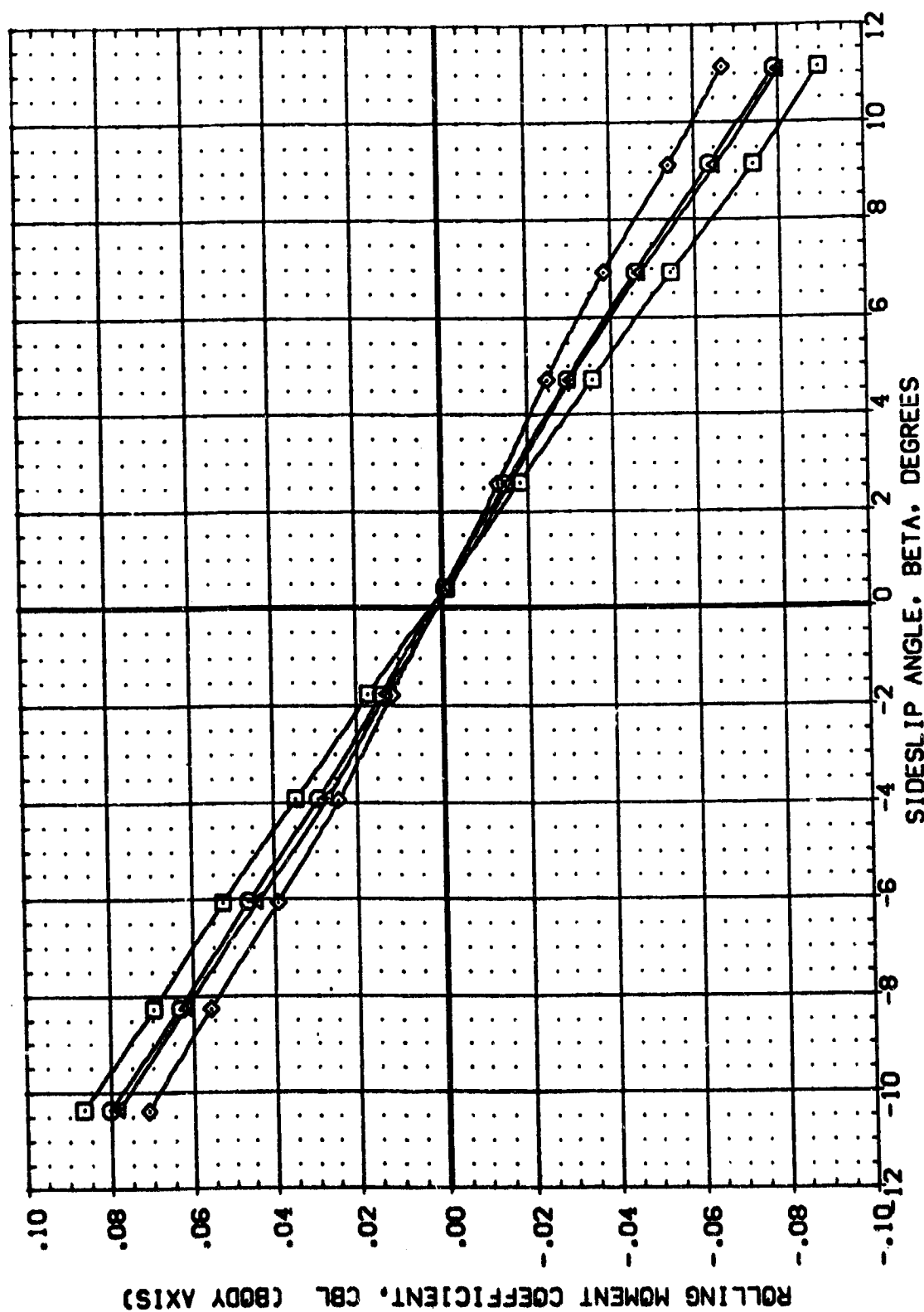
(888005)	HSTC 579(1A37) (034)(T14)(U7)
(888004)	HSTC 579(1A37) (034)(T14)(U7)
(888006)	HSTC 579(1A37) (034)(T14)(U7)
(888002)	HSTC 579(1A37) (034)(T14)(U7)

ALPHA 0.000
-5.000
5.000

BETA 0.000
-5.000
5.000

REFERENCE INFORMATION

SREF	6.1990	SG.IN.
LAREF	5.1600	IN.
BREF	5.1600	IN.
XPRP	2.7200	IN.
YPRP	.0000	IN.
ZPRP	.0000	IN.
SCALE	.0010	



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)

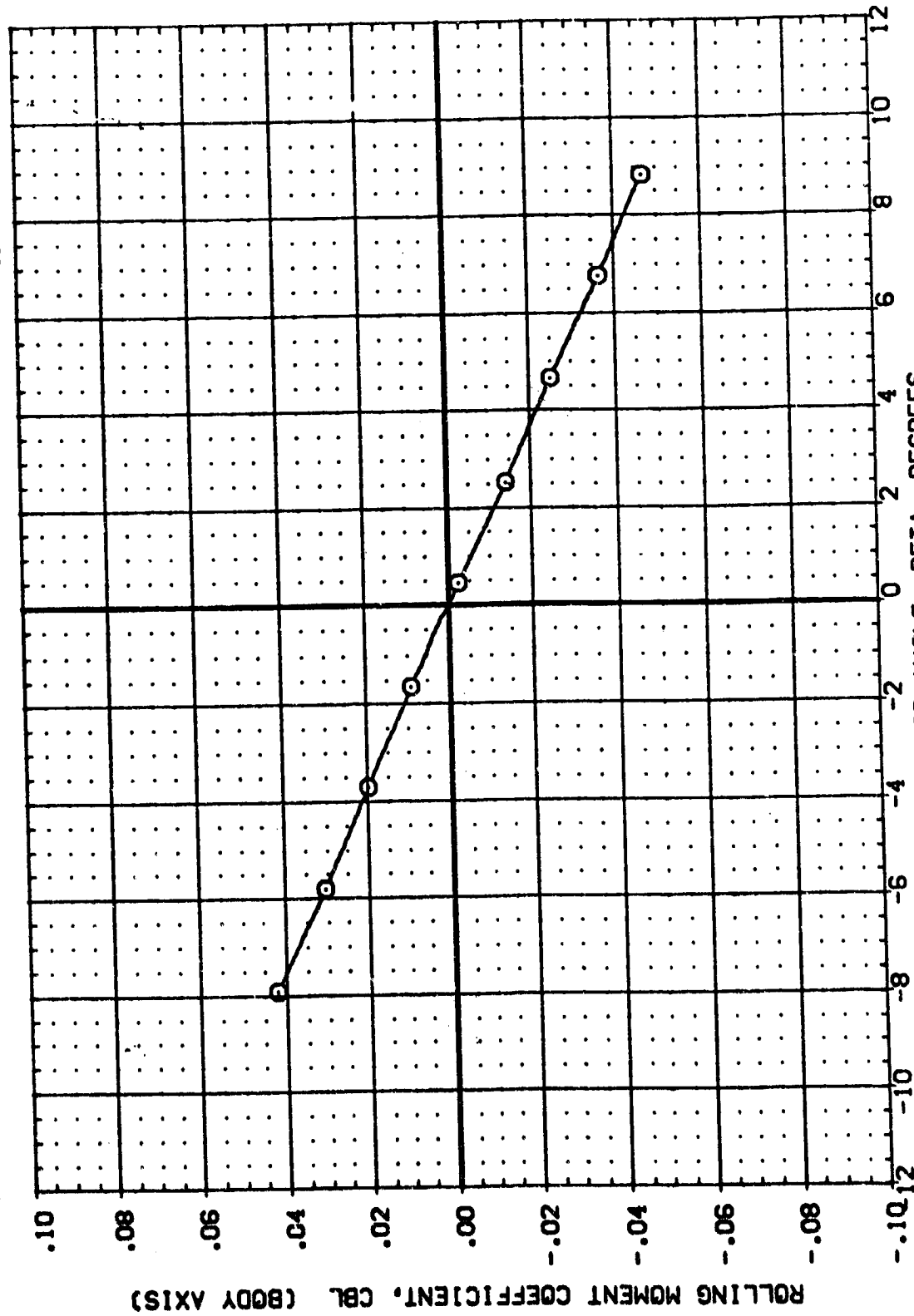
(A)MACH = 1.96

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REFERENCE INFORMATION
 SREF 6.1900 SO.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 0.000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (988005) 18PC 579(1A37) (034)(114)(17)
 (988004) DATA NOT AVAILABLE
 (988005) DATA NOT AVAILABLE
 (988002) DATA NOT AVAILABLE



SIDESLIP ANGLE, BETA, DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)

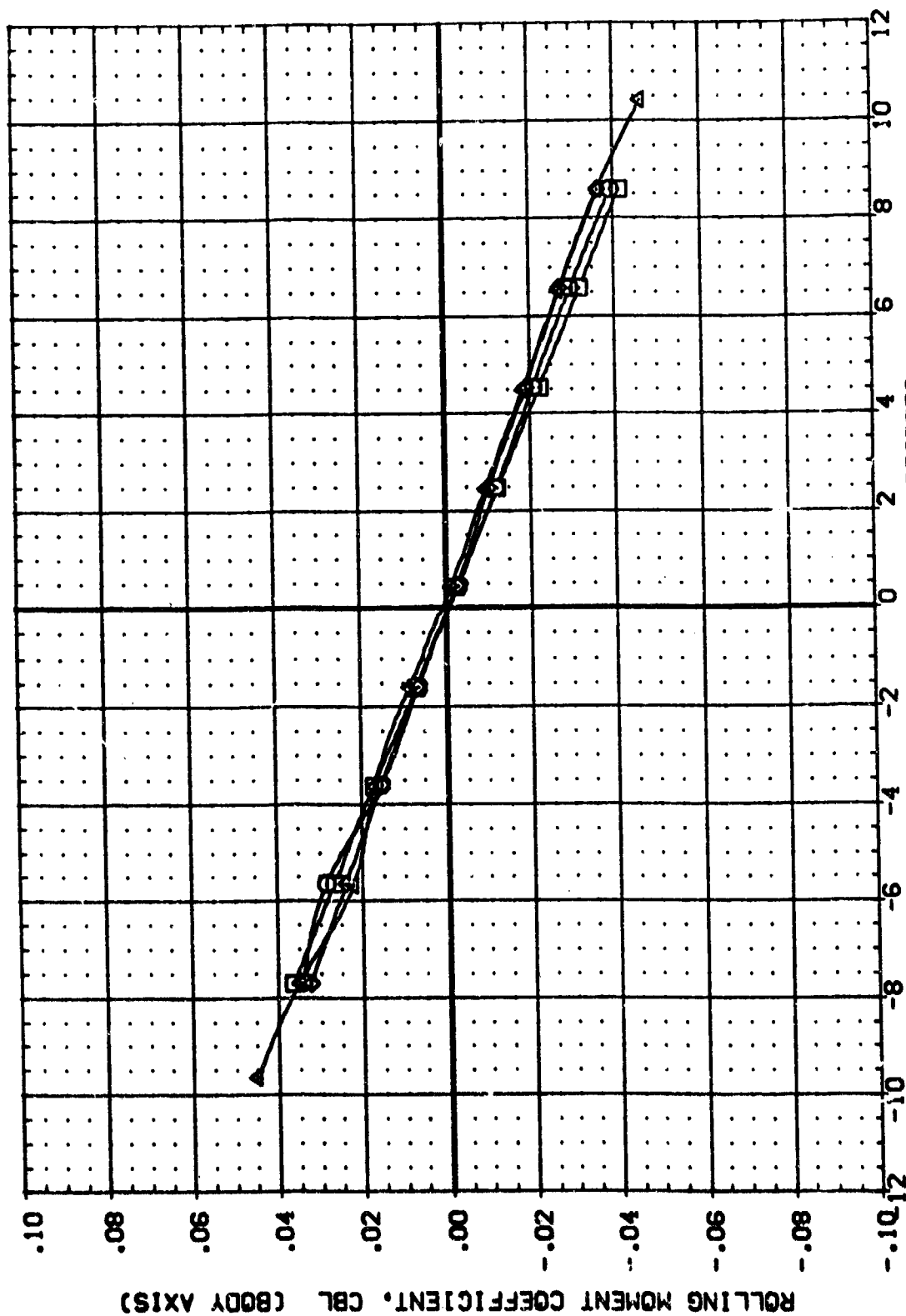
DATA SET SYMBOL CONFIGURATION DESCRIPTION

(B88005) H5FC 579(1A37) (034)(114)(U7)
 (B88004) H5FC 579(1A37) (034)(114)(U7)
 (B88006) H5FC 579(1A37) (034)(114)(U7)
 (B88002) H5FC 579(1A37) (034)(114)(U7)

ALPHA 0.000
 0.000
 -5.000
 5.000

ORIGIN 0.000
 0.000
 0.000
 0.000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP 0.0000 IN.
 ZMRP 0.0000 IN.
 SCALE 0.0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)

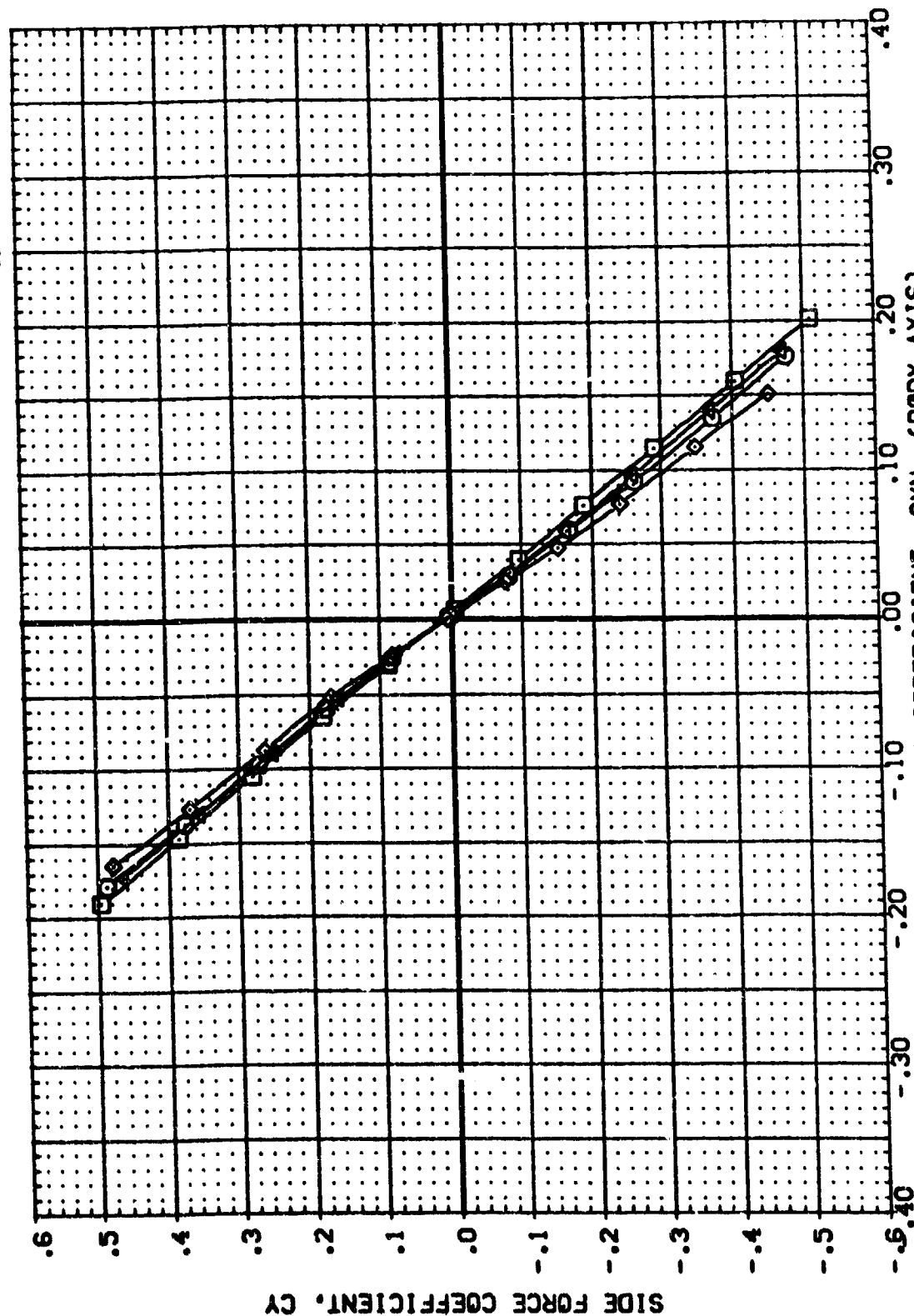
(CJ)MACH = 4.96

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REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XARP 2.7200 IN.
 YARP .0000 IN.
 ZARP .0000 IN.
 SCALE .0040

ALPHA 0.000
 ORBING .000
 -5.000
 5.000

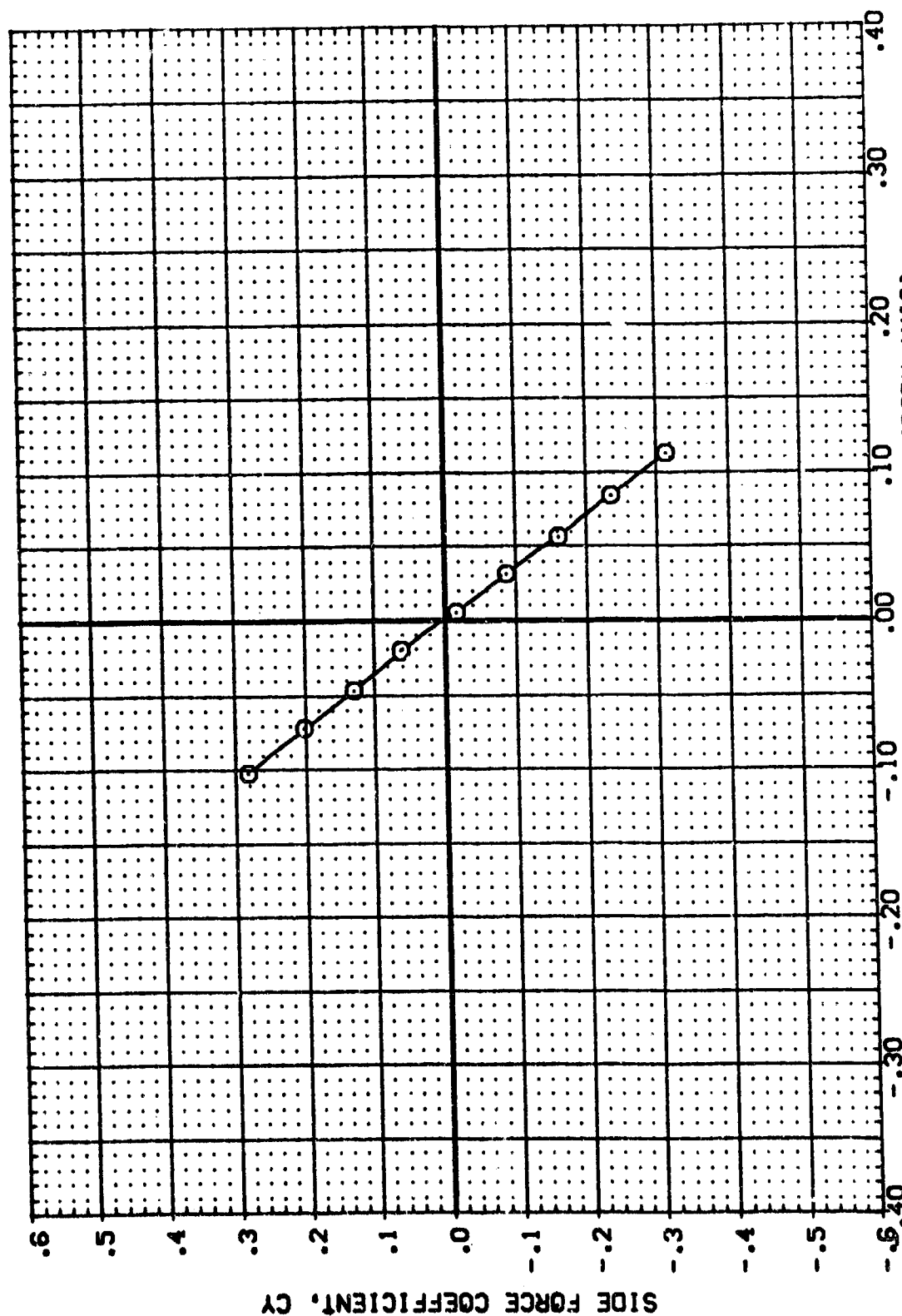
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888005) 157C 579(1A37) (034)(T14)(U7)
 (888006) 157C 579(1A37) (034)(T14)(U7)
 (888007) 157C 579(1A37) (034)(T14)(U7)
 (888008) 157C 579(1A37) (034)(T14)(U7)



YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(B86005)	MSFC 579(1A37) (034)(1143)(U7)
(B86004)	DATA NOT AVAILABLE
(B86006)	DATA NOT AVAILABLE
(B86002)	DATA NOT AVAILABLE
(B86003)	



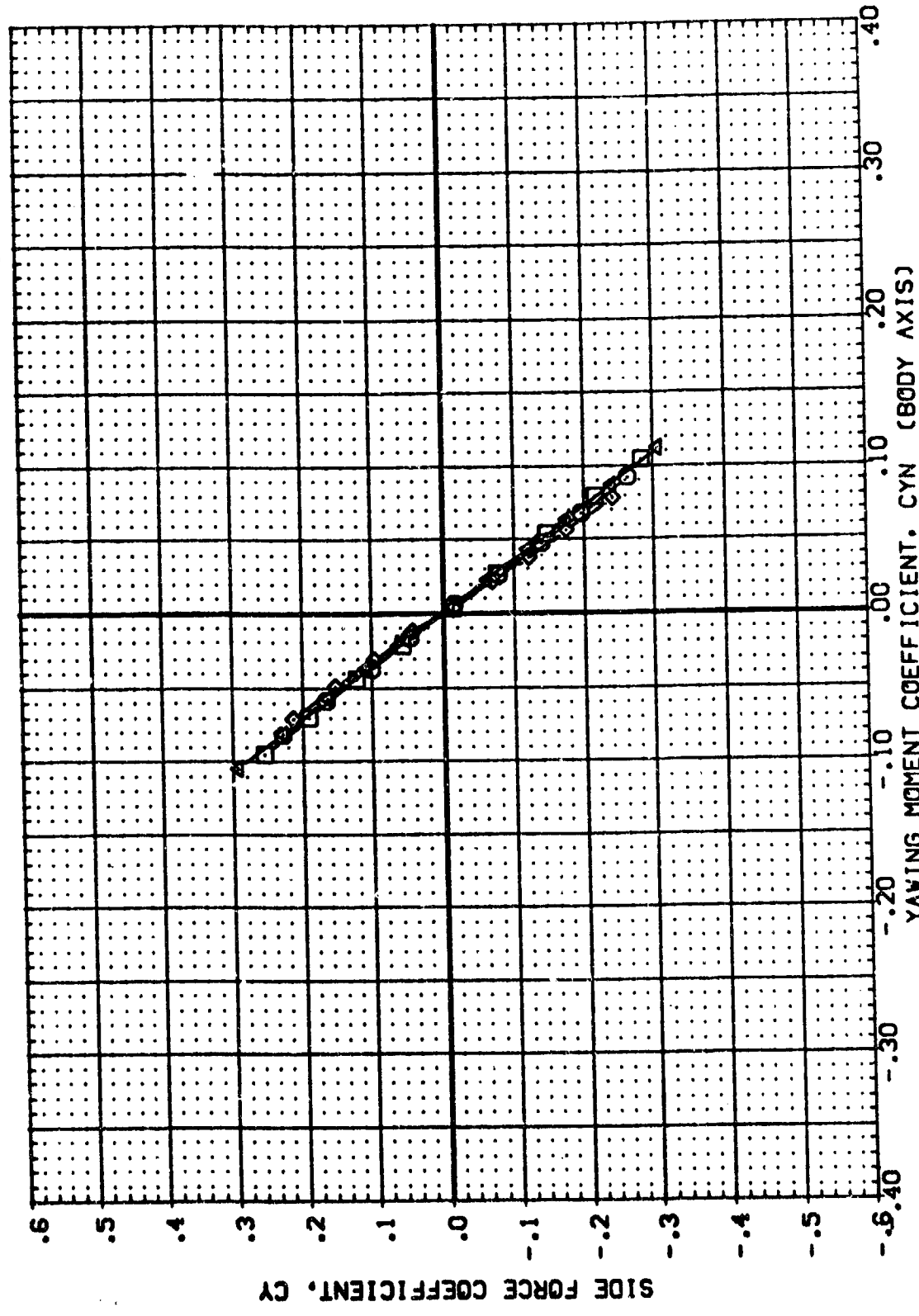
YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

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(B)MACH = 3.48



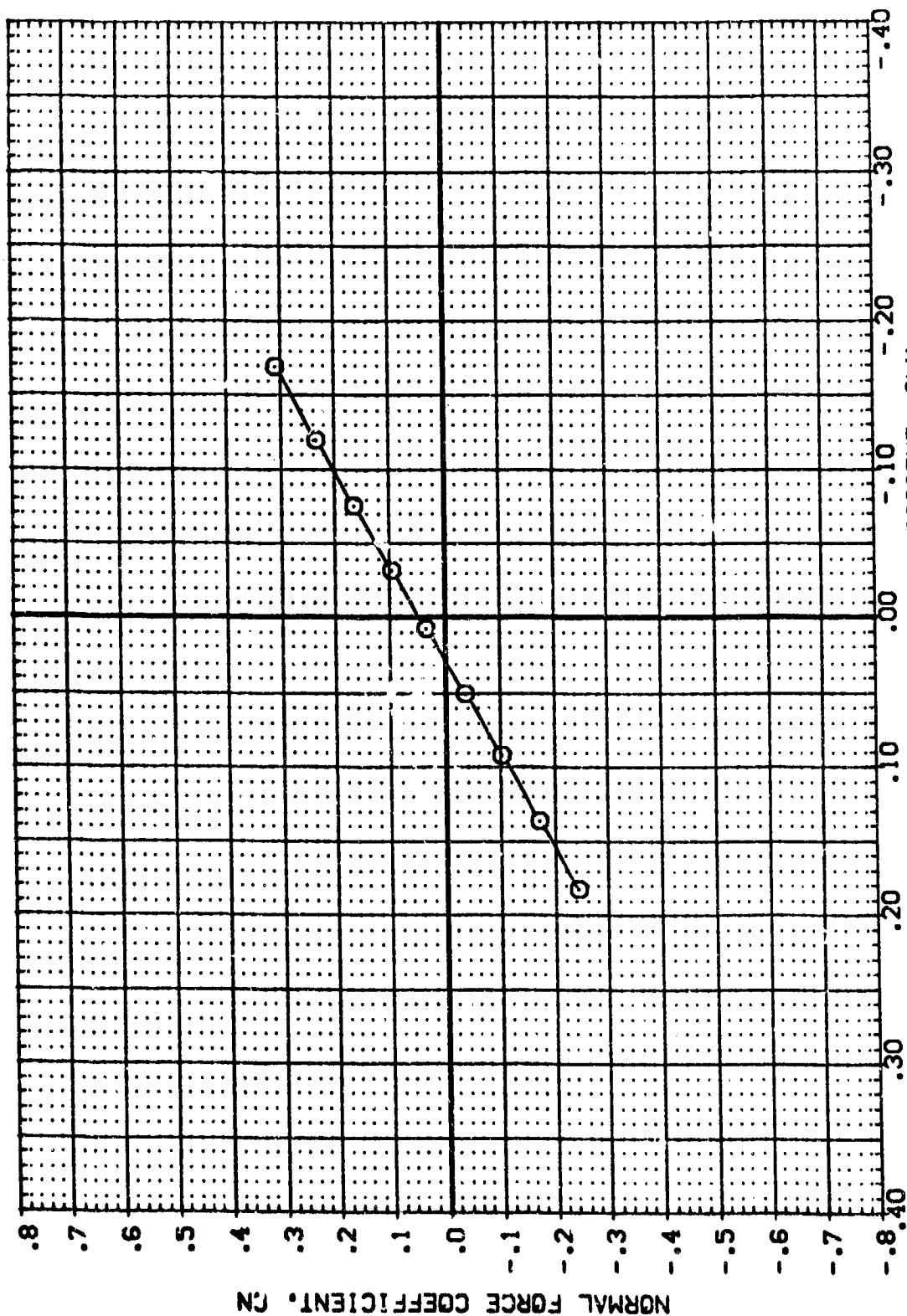
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORIGIN	REFERENCE INFORMATION
(888005)	HSTC 575(IAS7) (034)(I14)(U7)	.000	.000	SREF 5.1900 SQ.IN.
(888004)	HSTC 575(IAS7) (034)(I14)(U7)	-5.000	.000	LREF 5.1600 IN.
(888005)	HSTC 575(IAS7) (034)(I14)(U7)	5.000	.000	BREF 5.1600 IN.
(888002)	HSTC 575(IAS7) (034)(I14)(U7)	.000	.000	XARP 2.7200 IN.
				YARP .0000 IN.
				ZARP .0000 IN.
				SCALE .0040



DATA SET SYMBOL: (B65005)
 CONFIGURATION DESCRIPTION: MSFC 980(1A48) (0341)(T9)(S12)
 DATA NOT AVAILABLE

BETA: .000
 ORBING: .000
 .C20

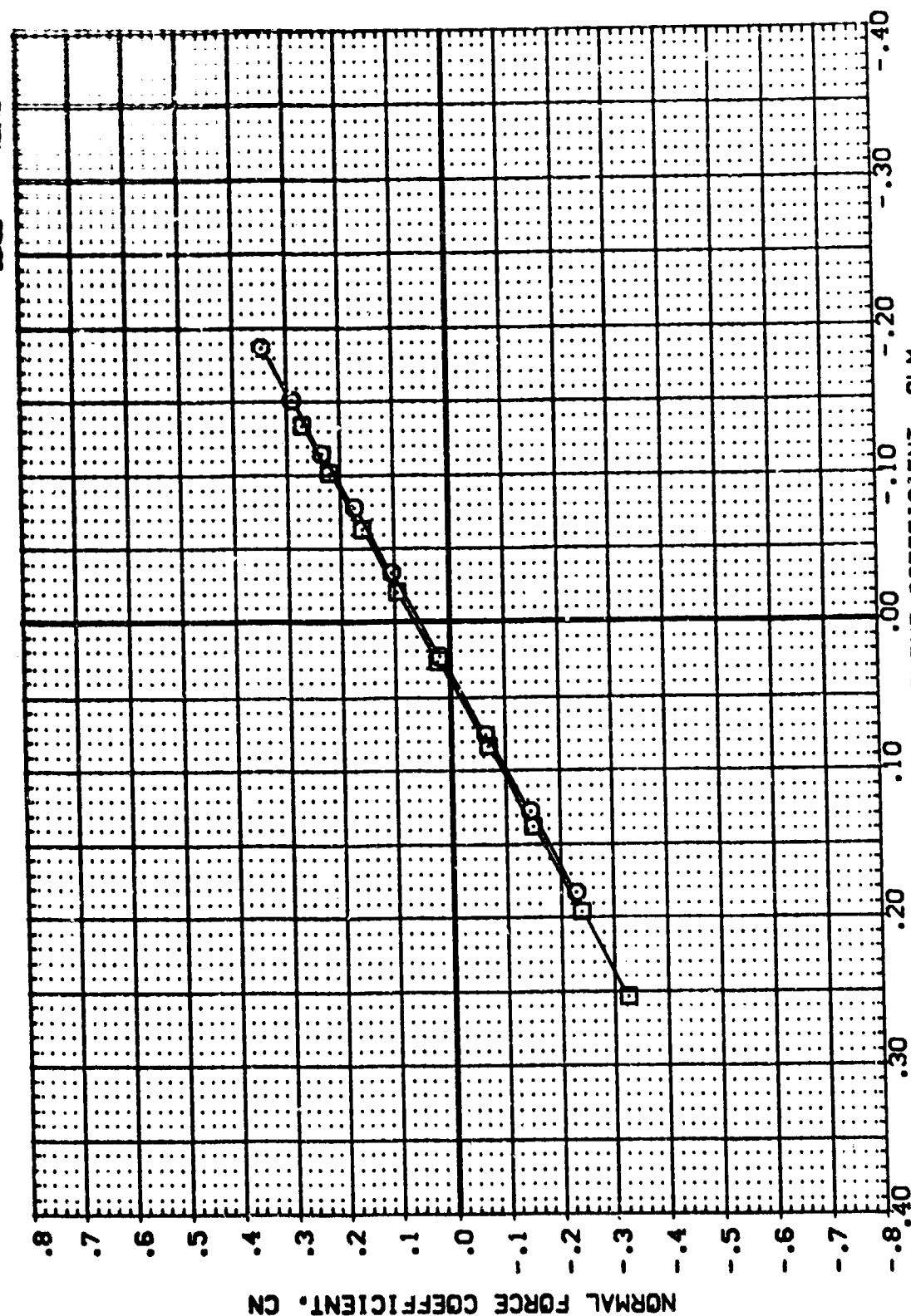
REFERENCE INFORMATION
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPRP: 2.7200 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0040



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(A)MACH = .60

DATA SET SYMBOL	COORDINATION	DESCRIPTION
(880035)	Q	HEC 580(1448) (034)(19)(512)
		(034)(1448) (034)(19)(513)



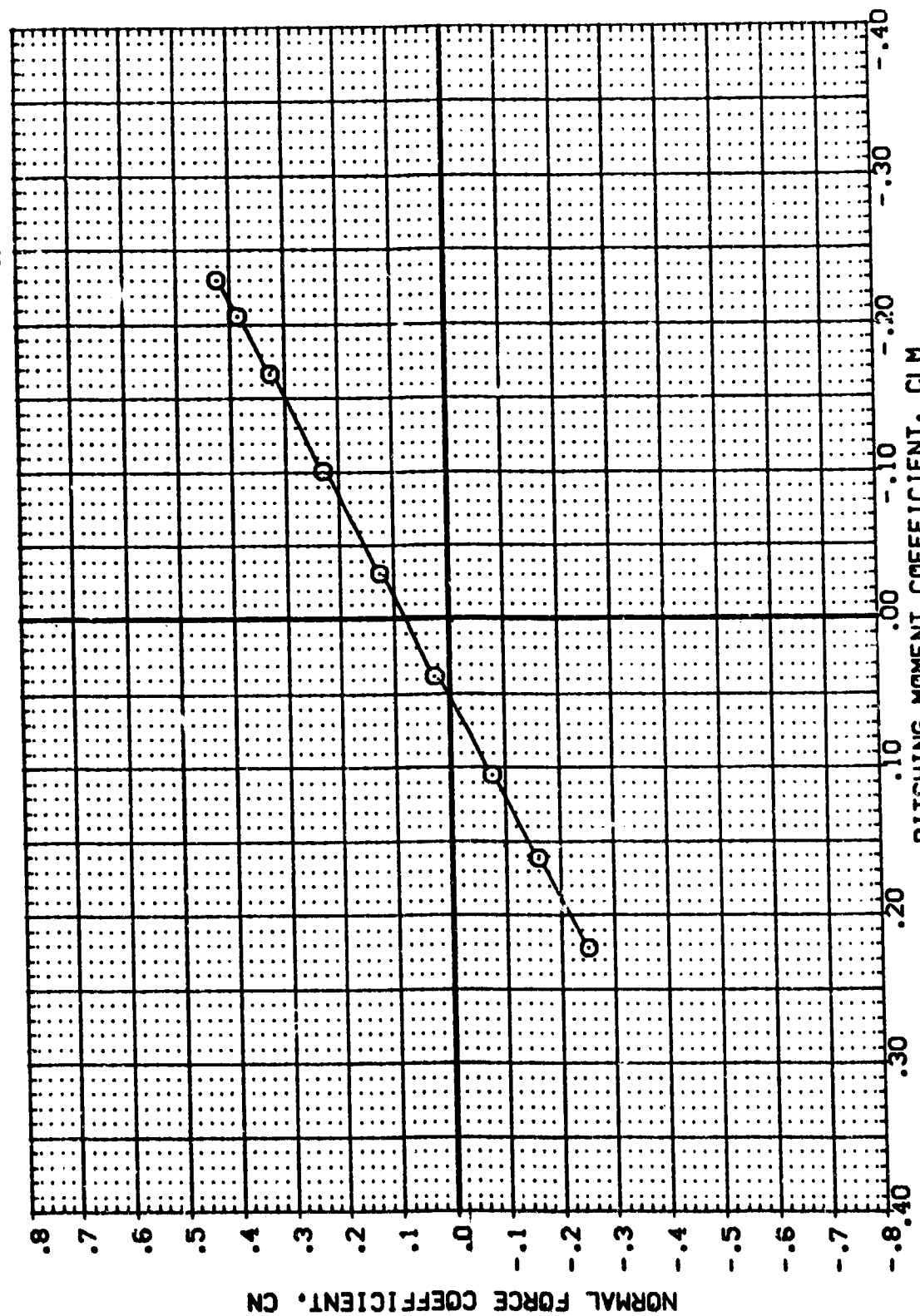
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

$$(C_B)_{MACH} = .90$$

DATA SET SYMBOL: (886005)
 CONFIGURATION DESCRIPTION: POSTC 580(1A48) (034)(79)(512)
 DATA NOT AVAILABLE

BETA: .000
 ORBING: .000

REFERENCE INFORMATION:
 SREF: 5.1580 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPRP: 2.7700 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0040

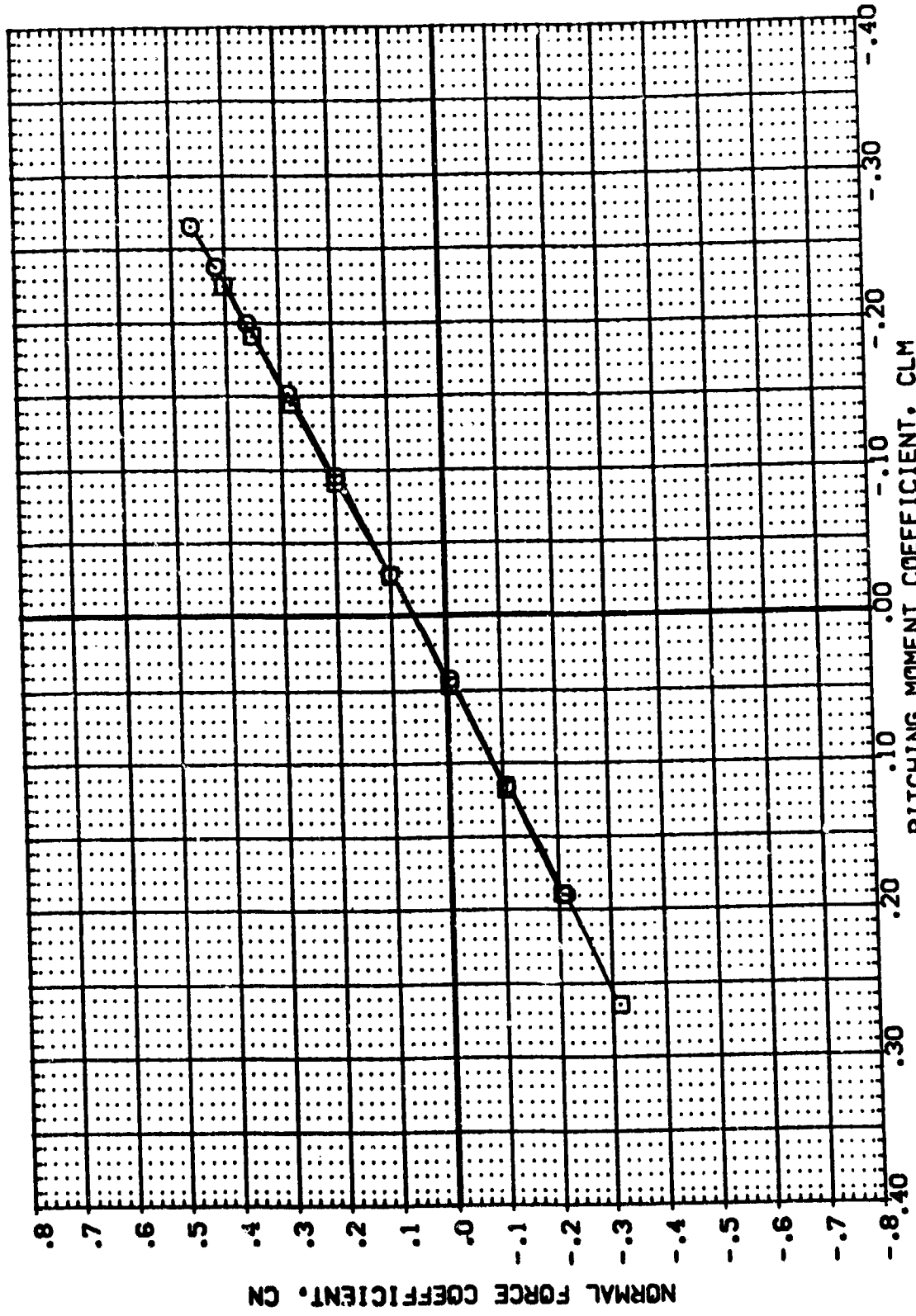


EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(C)MACH = 1.10



DATA SET SYMBOL: (888005) (888006) CONFIGURATION DESCRIPTION: (034)(TS)(S12) (ATTACH POST OFF) BETA: .000 ORBITING: .000 REFERENCE INFORMATION: SREF: 6.1980 SQ. IN. LREF: 5.1600 IN. BREF: 5.1600 IN. XPRP: 2.7200 IN. YPRP: .0000 IN. ZPRP: .0000 IN. SCALE: .0040

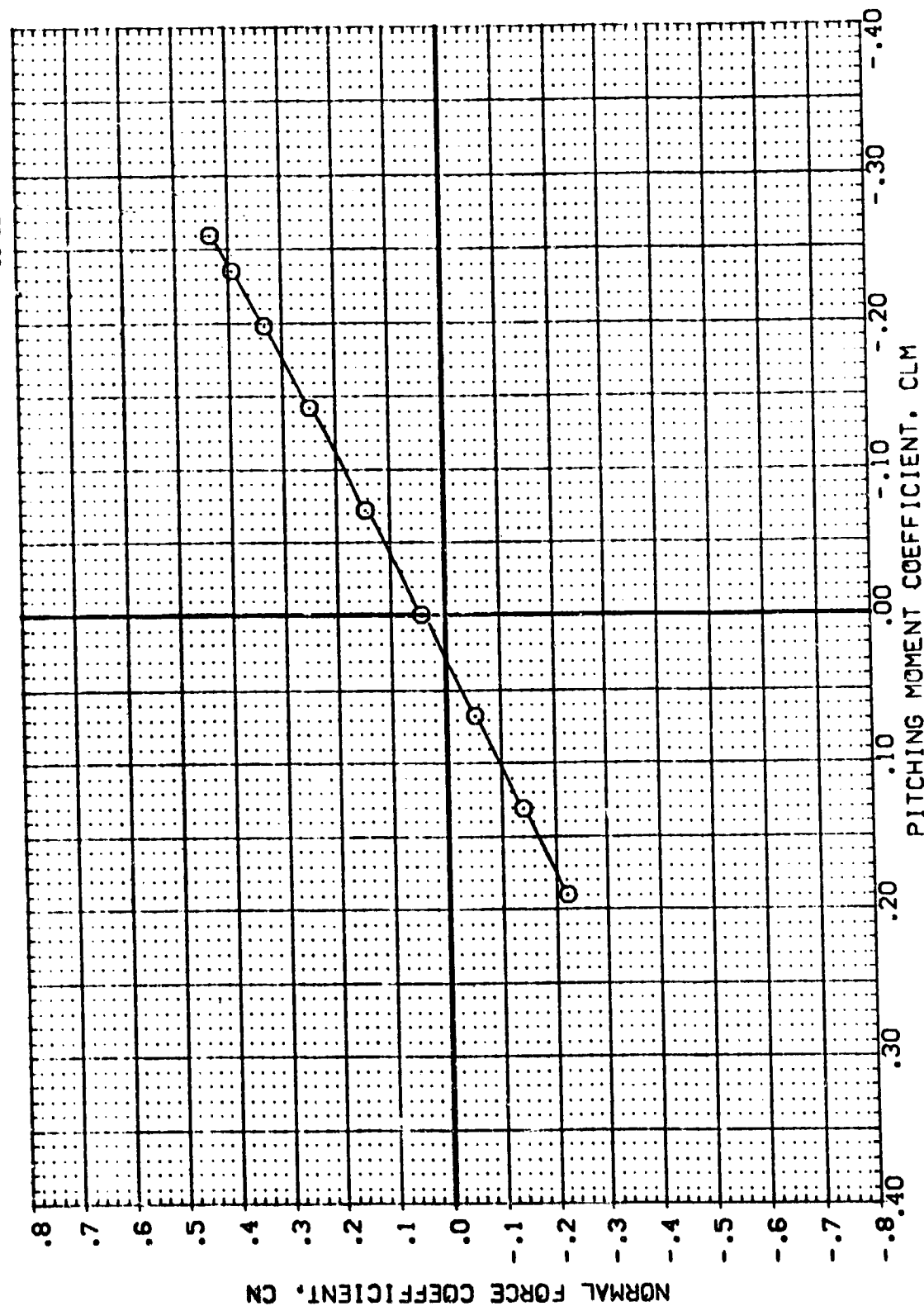


EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

DATA SET SYMBOL (8850CS) (365238) CONFIGURATION DESCRIPTION MSC 502(1448) (034)(79)(512) DATA NOT AVAILABLE

BETA ORBING
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1900 SQ.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0010



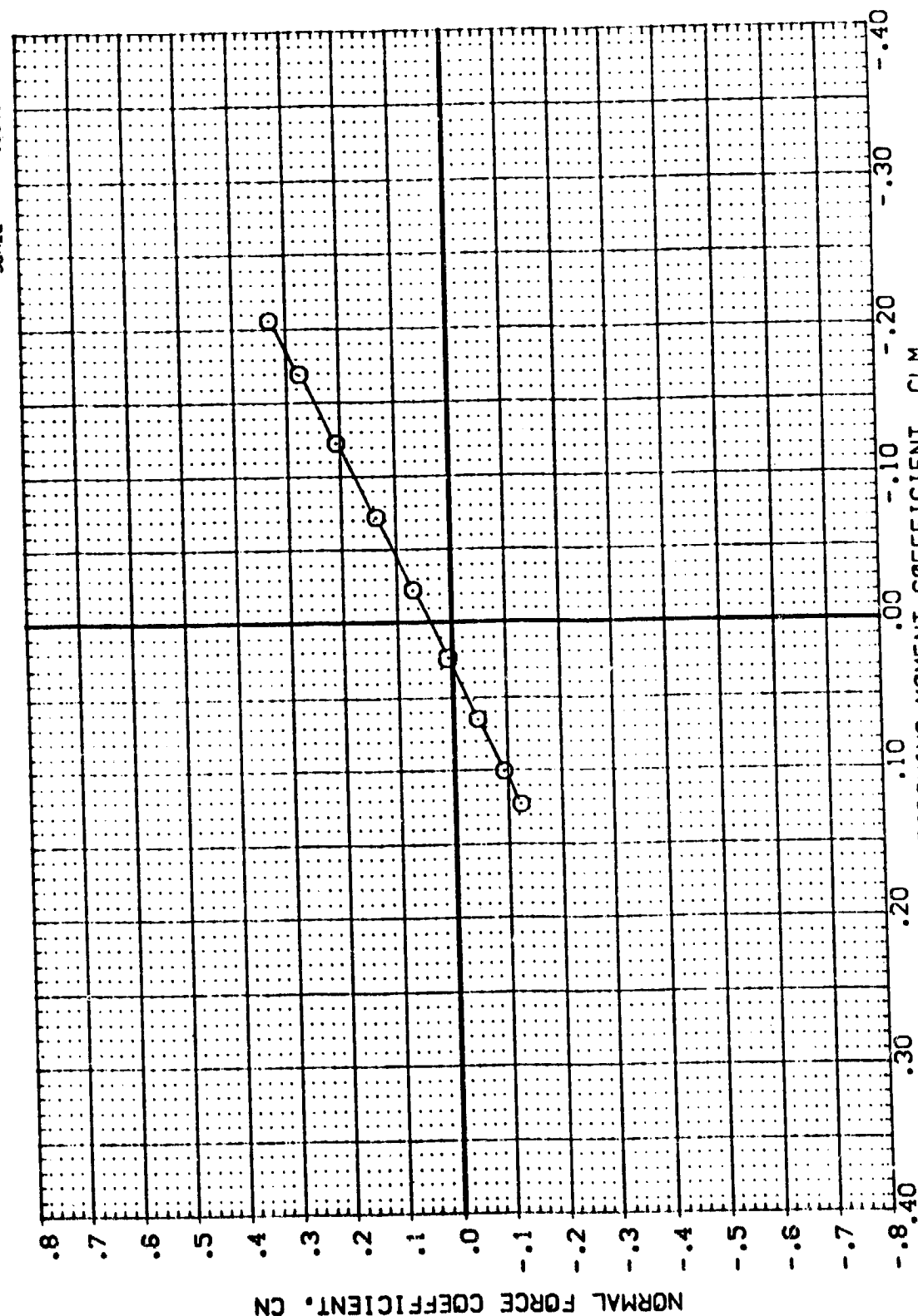
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(E)MACH = 1.46

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1630 IN.
 XREF 2.7230 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0010

BETA ORBITAL
 .000
 .000

DATA SET SY80- CONFIGURATION DESCRIPTION
 (889005) MSC 580(1448) (034)(T9)(S12)
 (889008) DATA NOT AVAILABLE



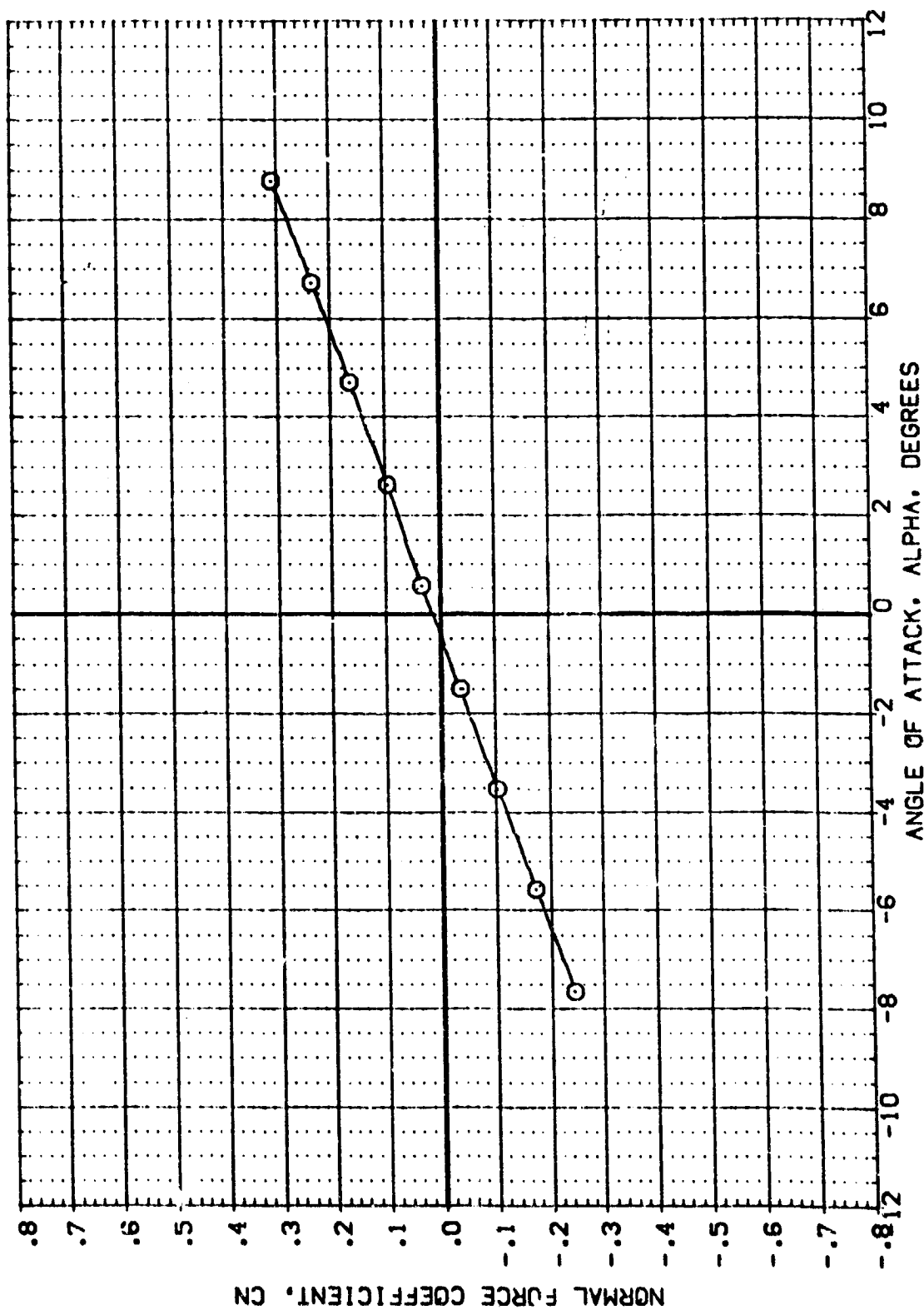
PITCHING MOMENT COEFFICIENT, CLM

EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

DATA SET SYMBOL: (B89005)
 CONFIGURATION DESCRIPTION: MSFC 5801(A48) (C34)(19)(S12)
 DATA NOT AVAILABLE

BETA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

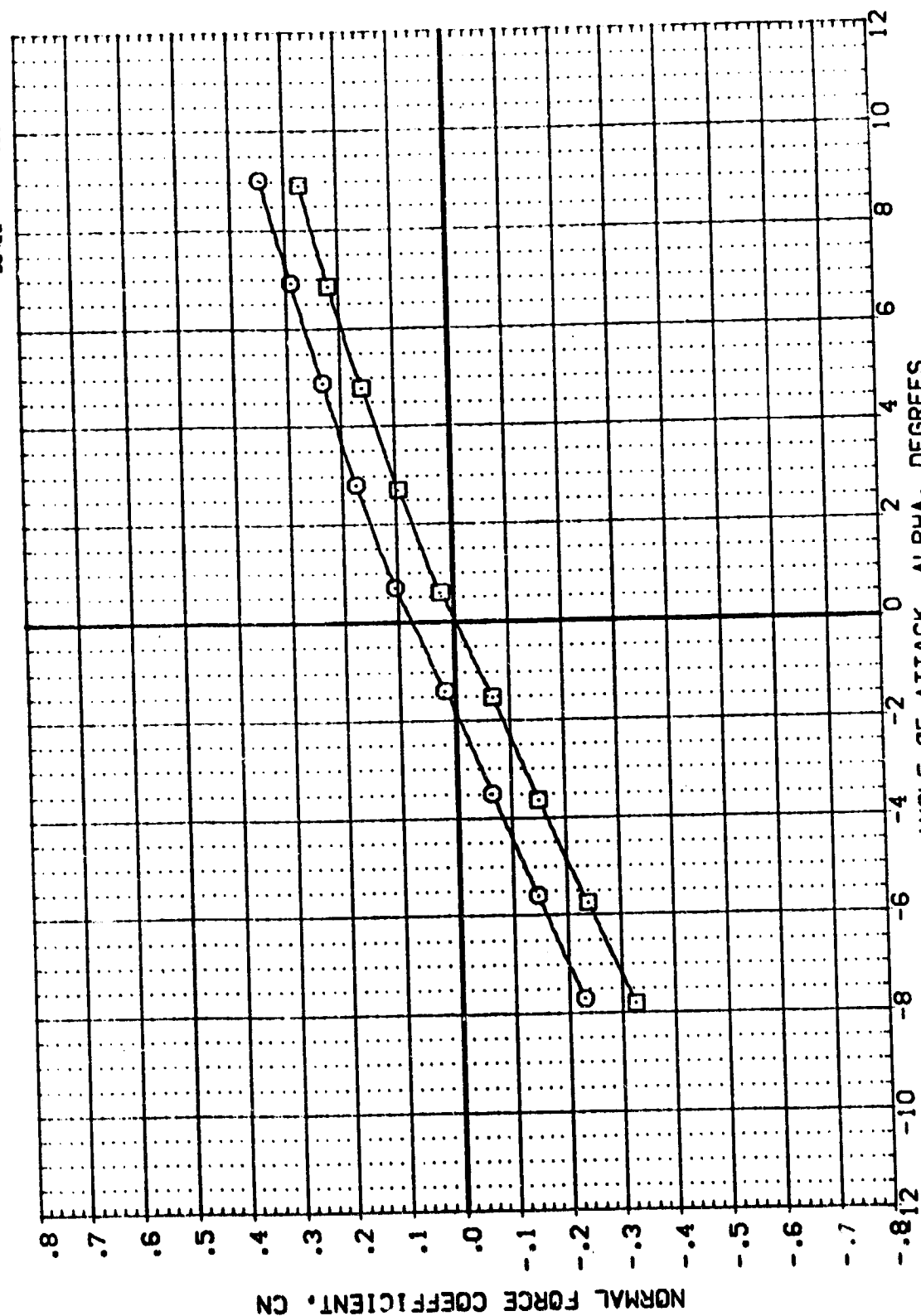
(A)MACH = .60



DATA SET SYMBO. CONFIGURATION DESCRIPTION
(B89005) ☐ MSFC 580(A48) (034)(T9)(S12) (ATTACH POS OFF)
(B89008) ☐ MSFC 580(A48) (034)(T9)(S12) (ATTACH POS OFF)

BETA ORBITING
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1880 SQ.IN.
LREF 5.1600
BREF 5.1600
XREF 2.7200
YREF .0000
ZREF .0000
SCALE .0040



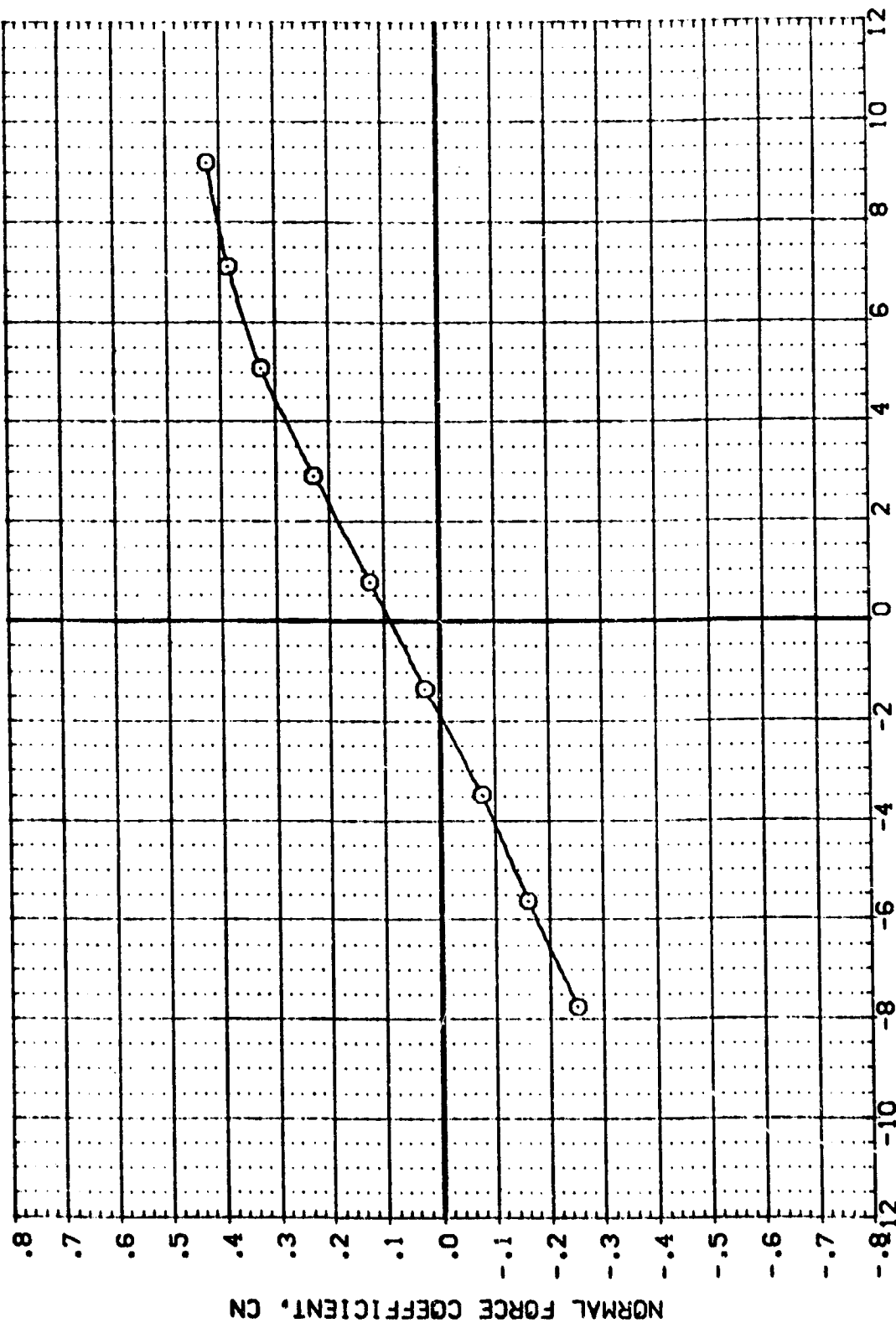
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885005) I MSC 580(1A48) (034)(19)(S12)
 (885008) DATA NOT AVAILABLE

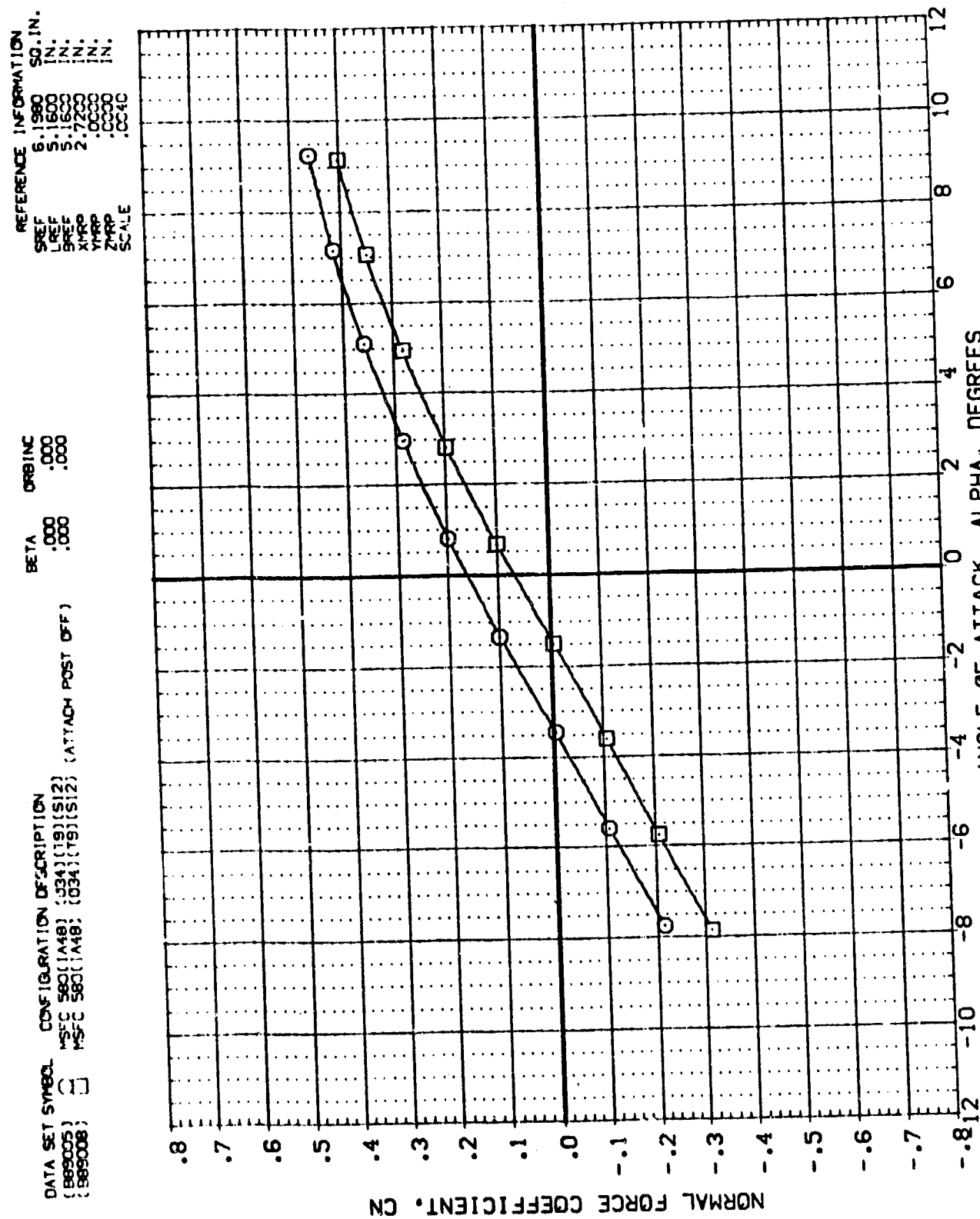
BETA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 5.1800 IN.
 BREF 5.1800 IN.
 XREF 2.7200
 YREF .0000
 ZREF .0000
 SCALE .0010



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

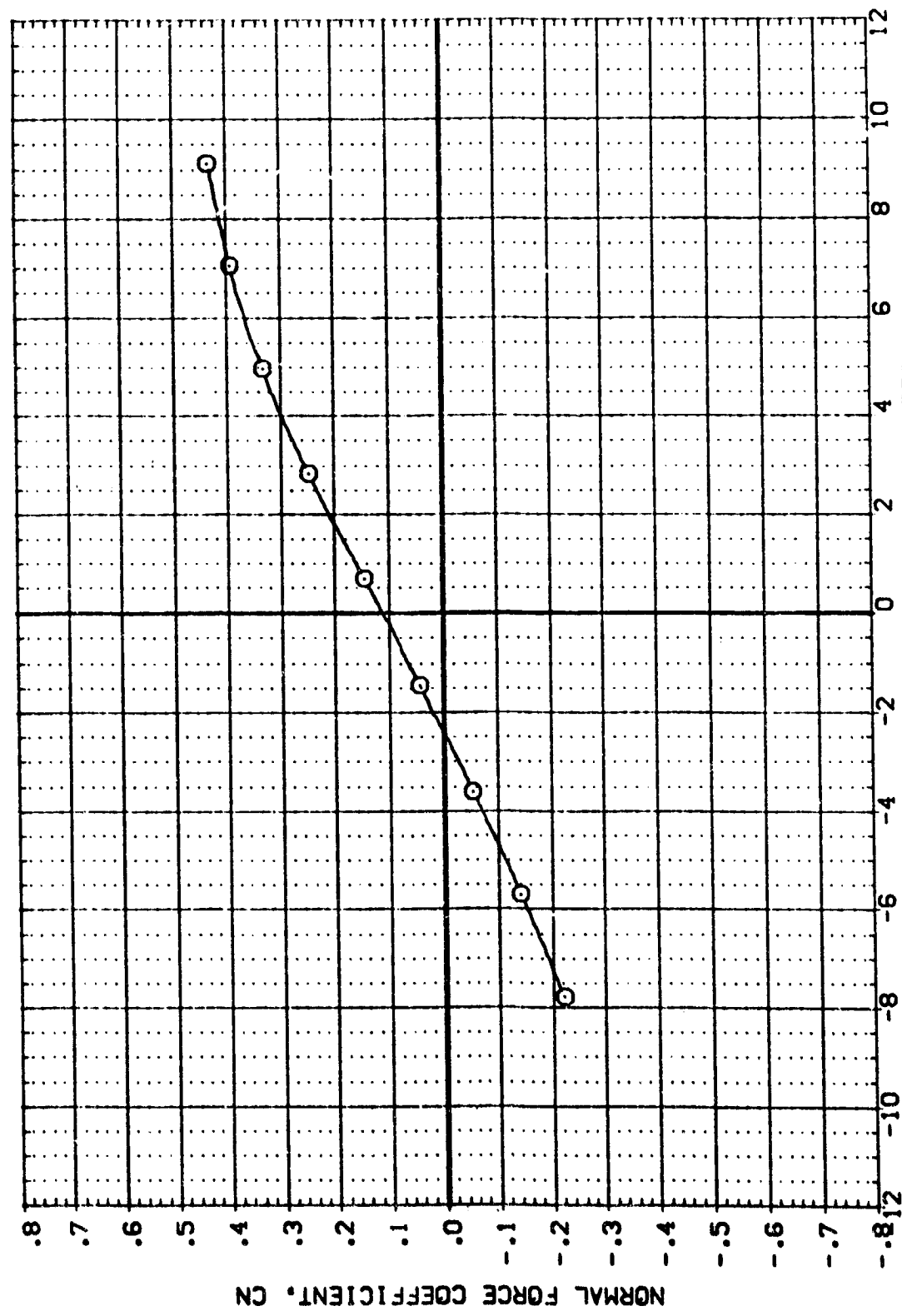
(C)MACH = 1.10


$$(\text{D})_{\text{MACH}} = 1.25$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) □ MFC 560(1A18) (C34)(T9)(S12)
 (B89008) DATA NOT AVAILABLE

BETA ORBING
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1990 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



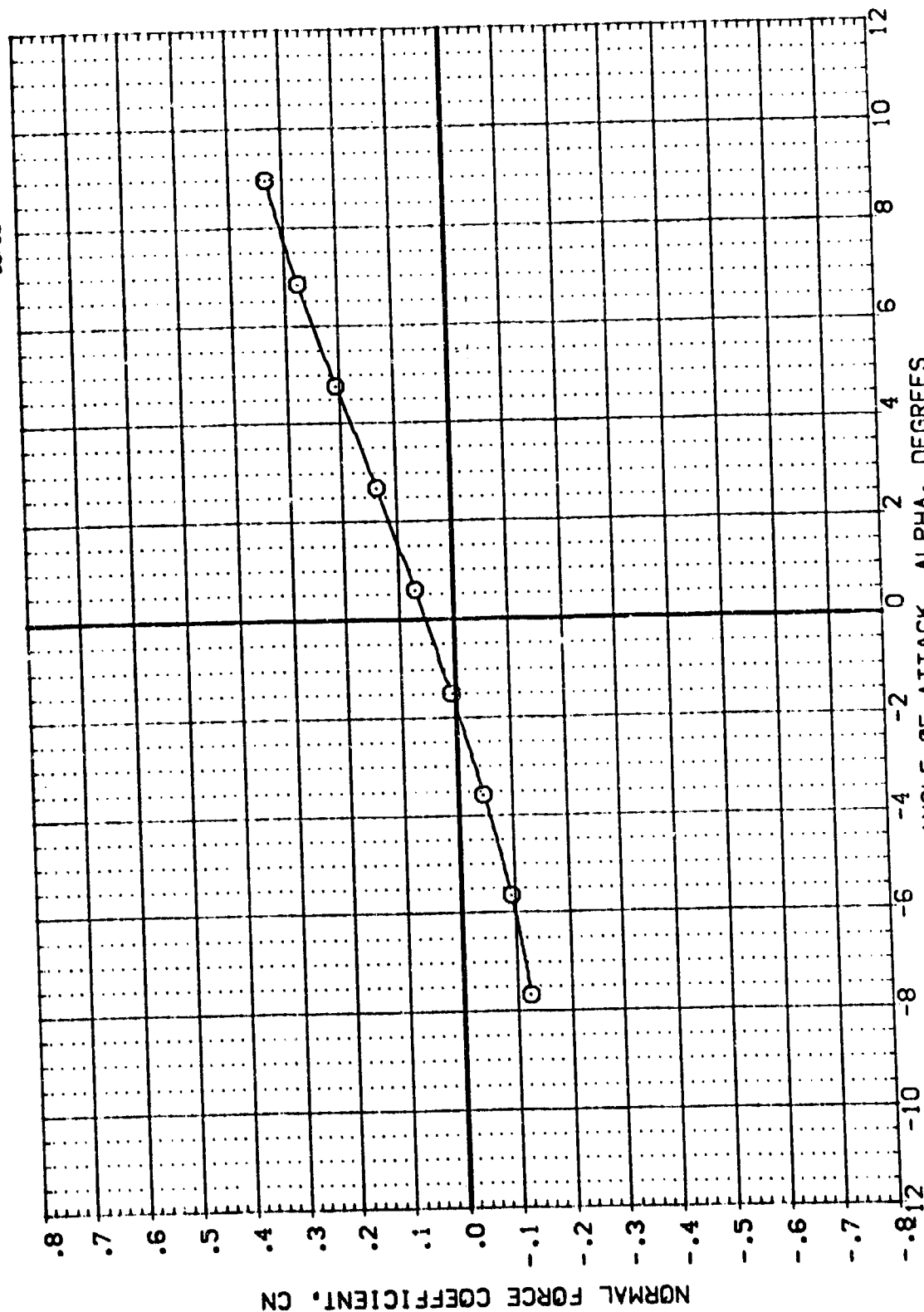
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(C)MACH = 1.46

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 SREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B69005) MSFC 590(1A48) (Q34)(T9)(S12)
 (B69008) DATA NOT AVAILABLE

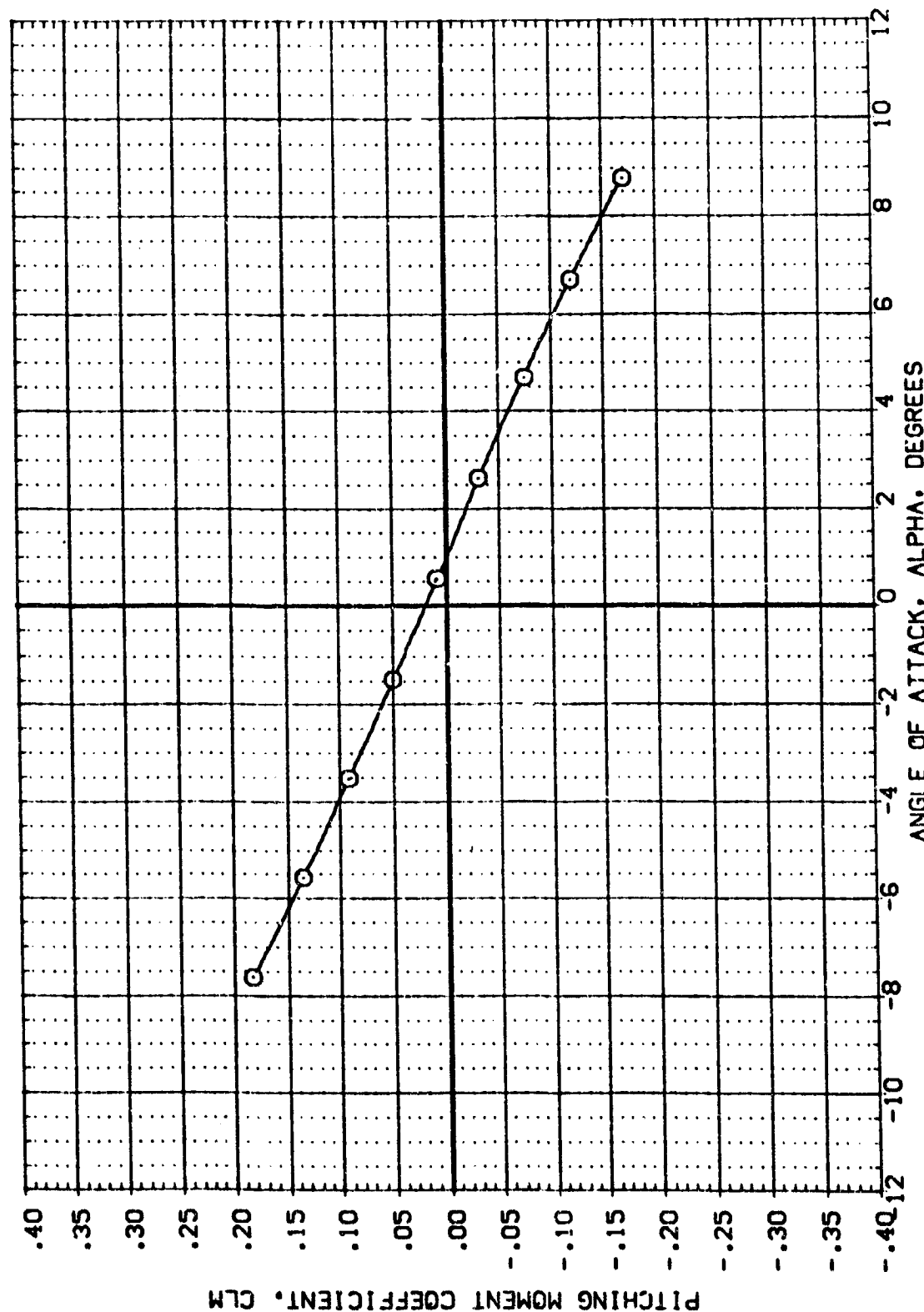


EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

DATA SET SYMBOL (885005) (885008) MSFC 590(1A48) (034)(T9)(S12) DATA NOT AVAILABLE

BETA ORB INC
:000 :000
:000 :000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1500 IN.
BREF 5.1600 IN.
XMRP 2.7230 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



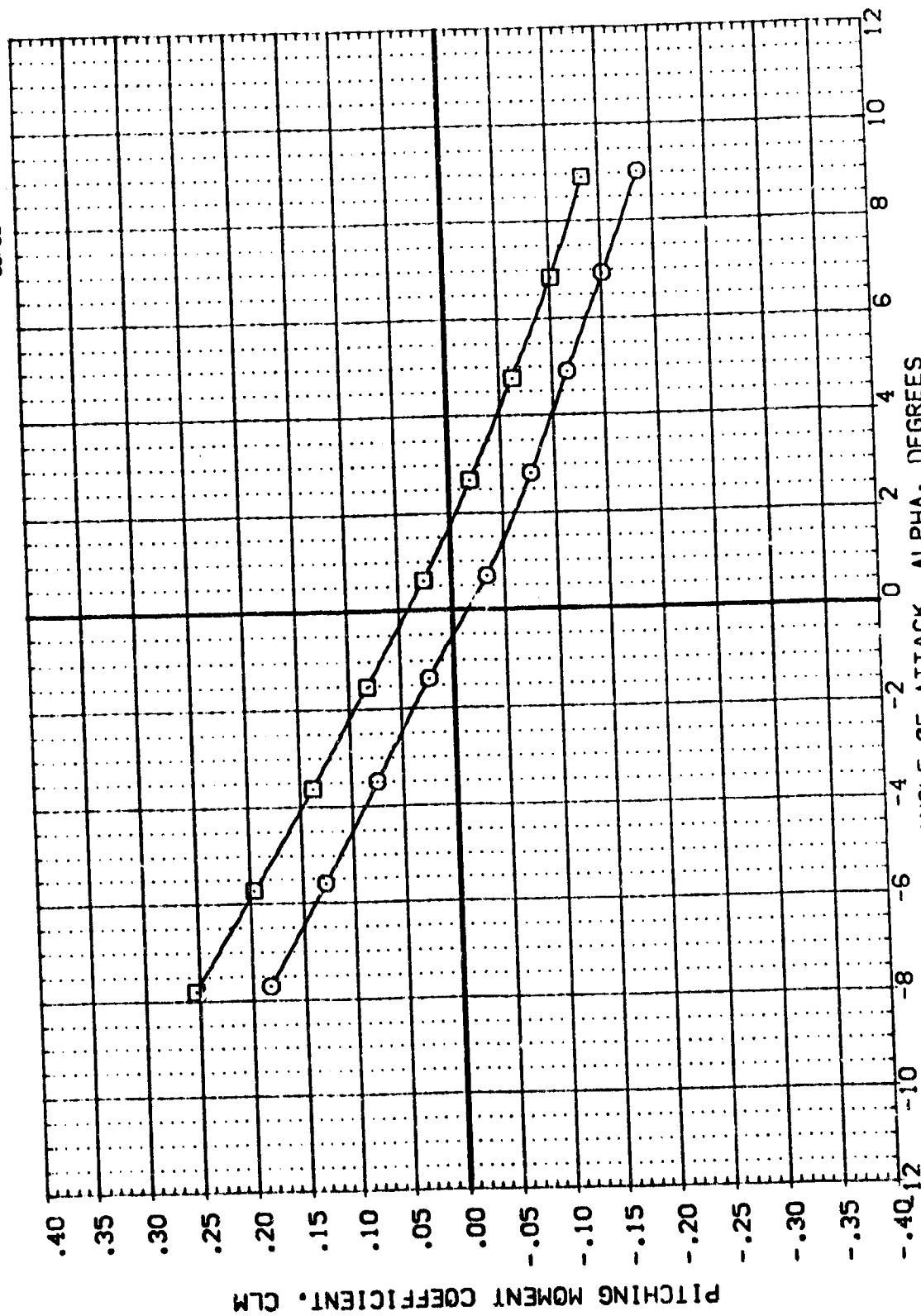
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(A)MACH = .60

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0010

BETA ORBITING
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) MSFC 5801(A48) (034)(TS)(S12) (ATTACH POST OFF)
 (B89008) MSFC 5801(A48) (034)(TS)(S12)



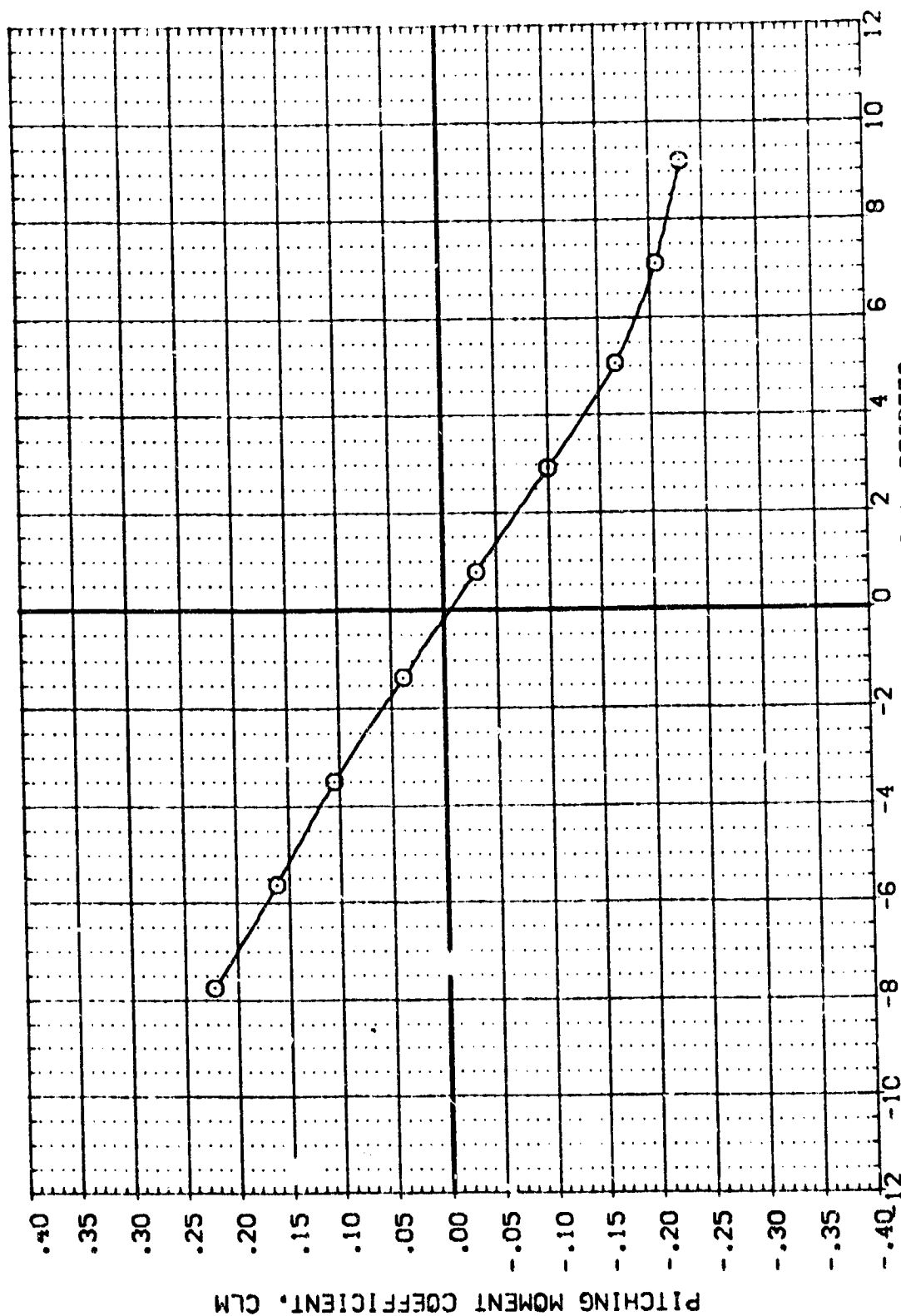
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(B)MACH = .90

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) MSC 580(1A48) (034)(T9)(S12)
 (B89008) DATA NOT AVAILABLE



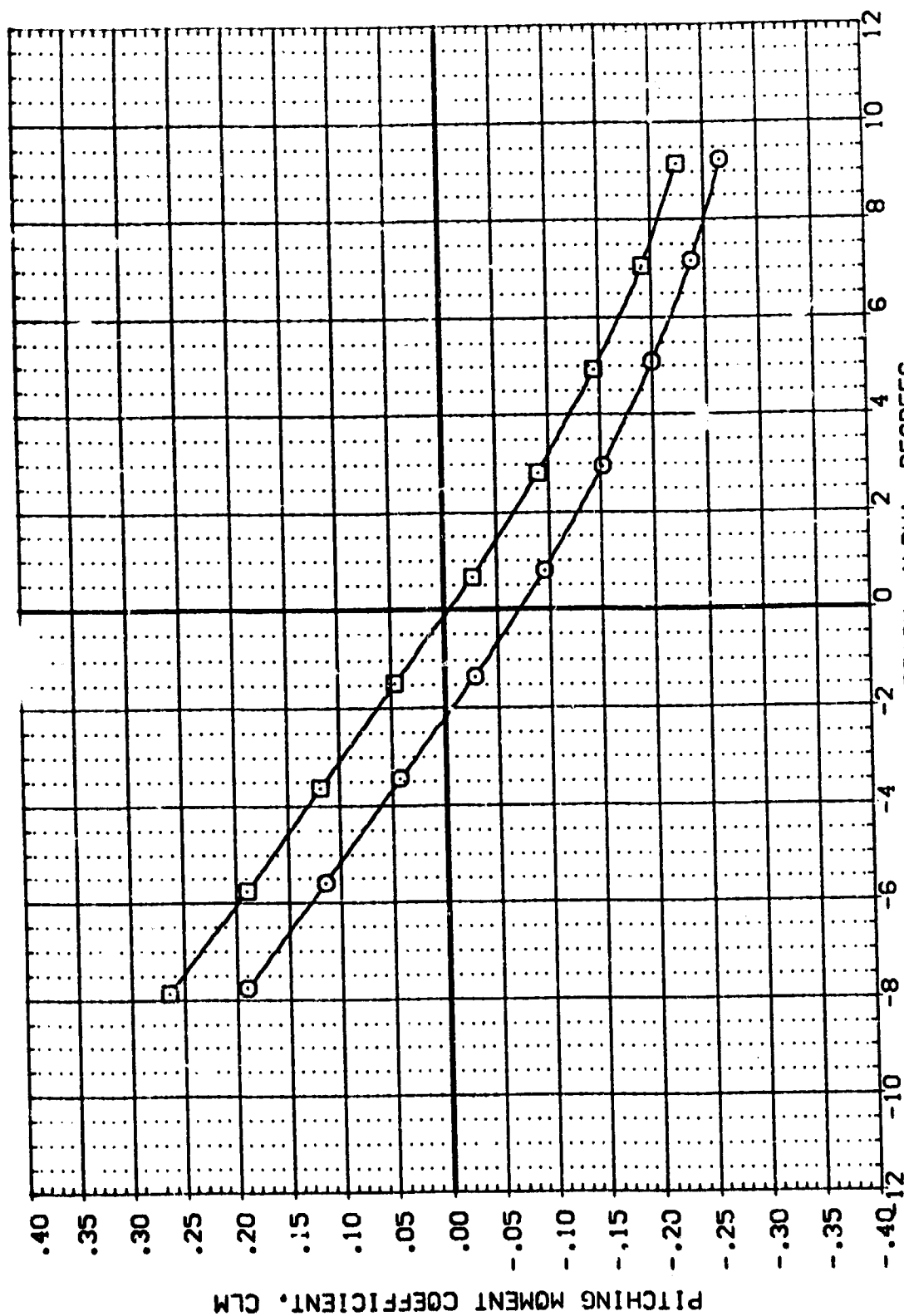
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(C)MACH = 1.10

REFERENCE INFORMATION
 SHEET 6.1980 50. IN.
 LAEF 5.1670 IN.
 BREF 5.1670 IN.
 YREF 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

BETA ORBING
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) XSEC 5901(A48) (034)(T9)(S12)
 (B89008) XSEC 5901(A48) (034)(T9)(S12) (ATTACH POST)



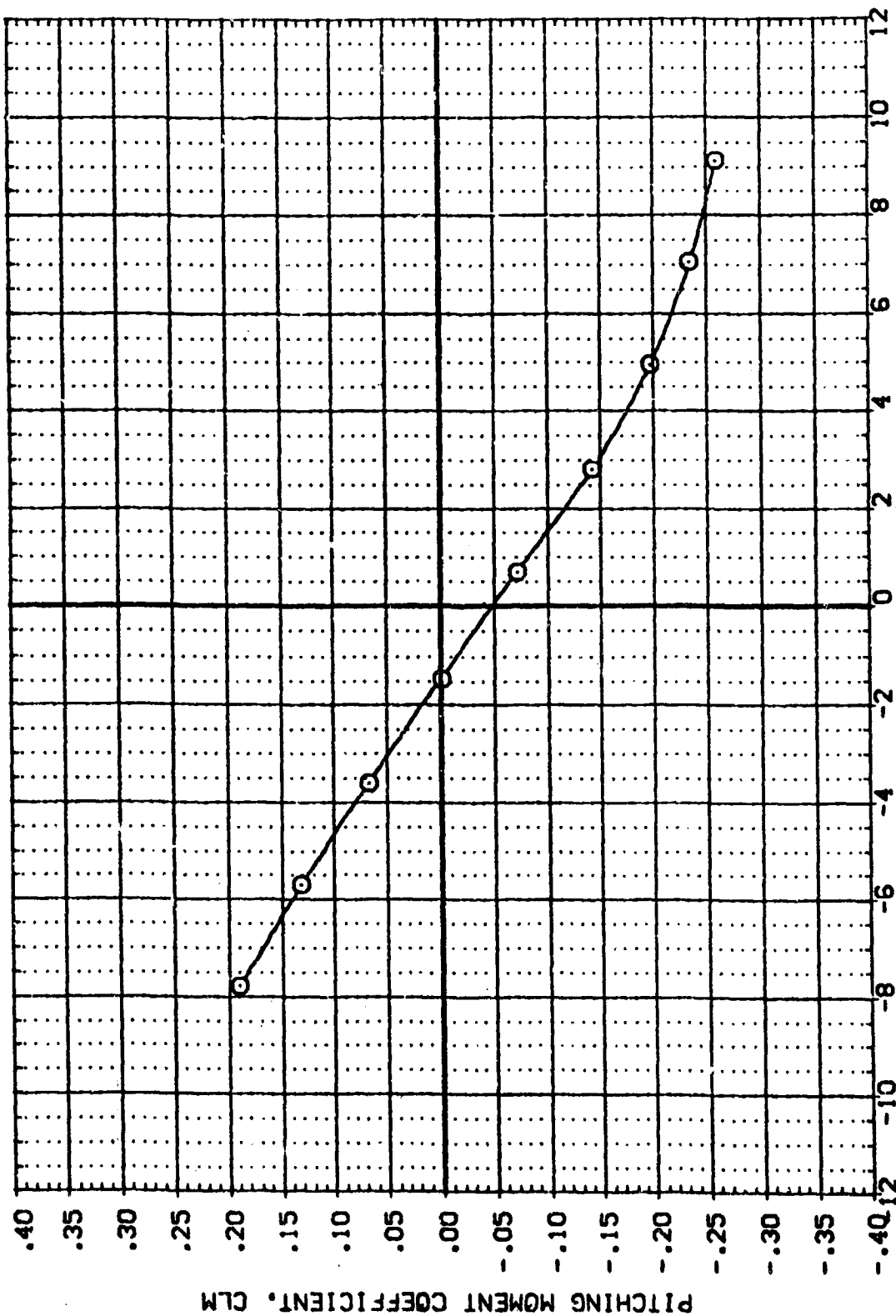
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(D)MACH = 1.25

DATA SET SYMBOL: (B89005)
 (B89006) MSFC 590 (1A49) (034) (79) (S12)
 DATA NOT AVAILABLE

BETA: .000
 ORBINC: .000

REFERENCE INFORMATION
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPRP: 2.7200 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0010



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(E)MACH = 1.46

REFERENCE INFORMATION

SREF	6.1980	IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XPRP	2.7200	IN.
YPRP	.0000	IN.
ZPRP	.0000	IN.
SCALE	.0040	

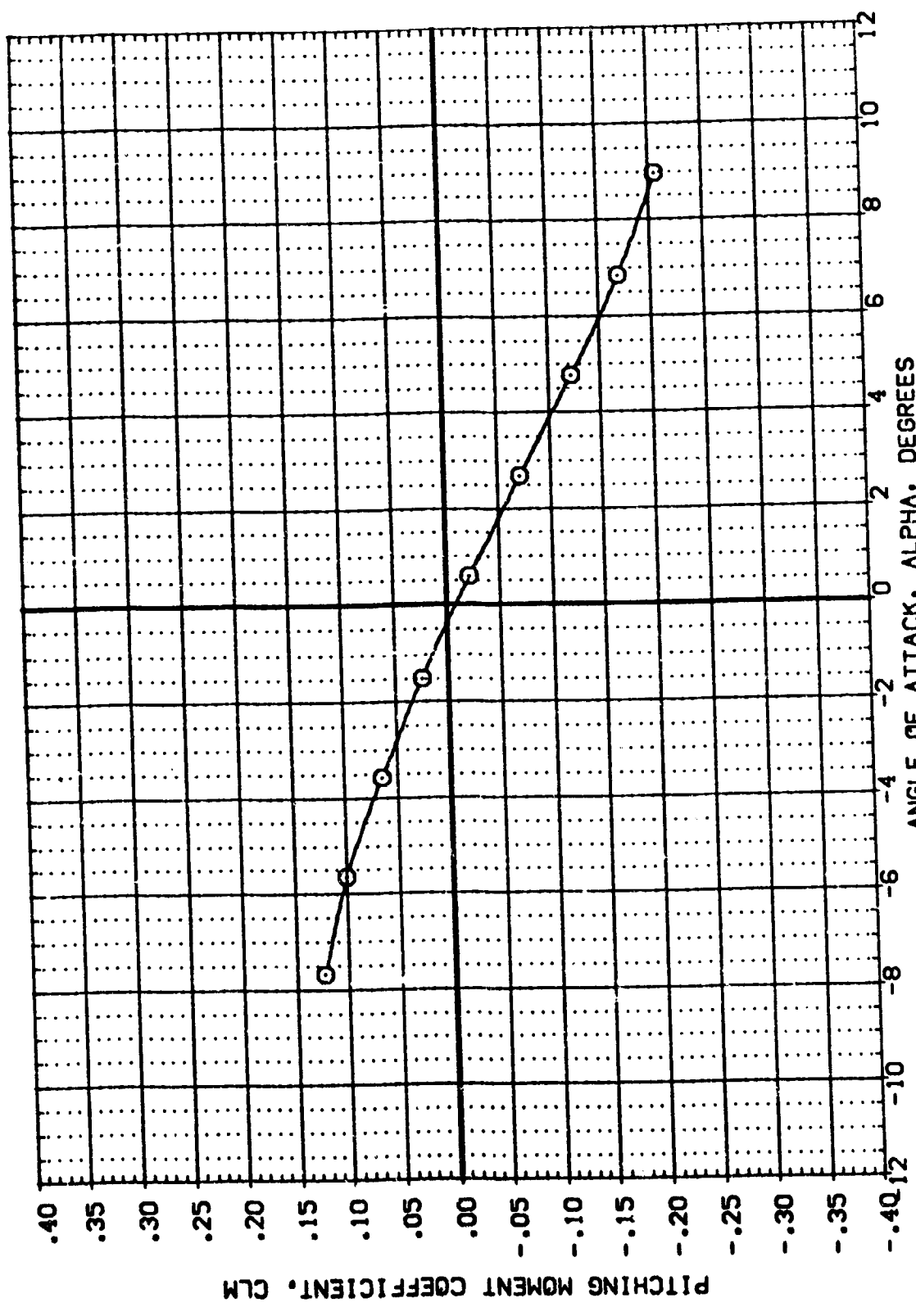
BETA ORBINC

BETA	.000
ORBINC	.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(B85005) NSFC 580(1A48) (0341)(TS1)(S12)

(B85008) DATA NOT AVAILABLE



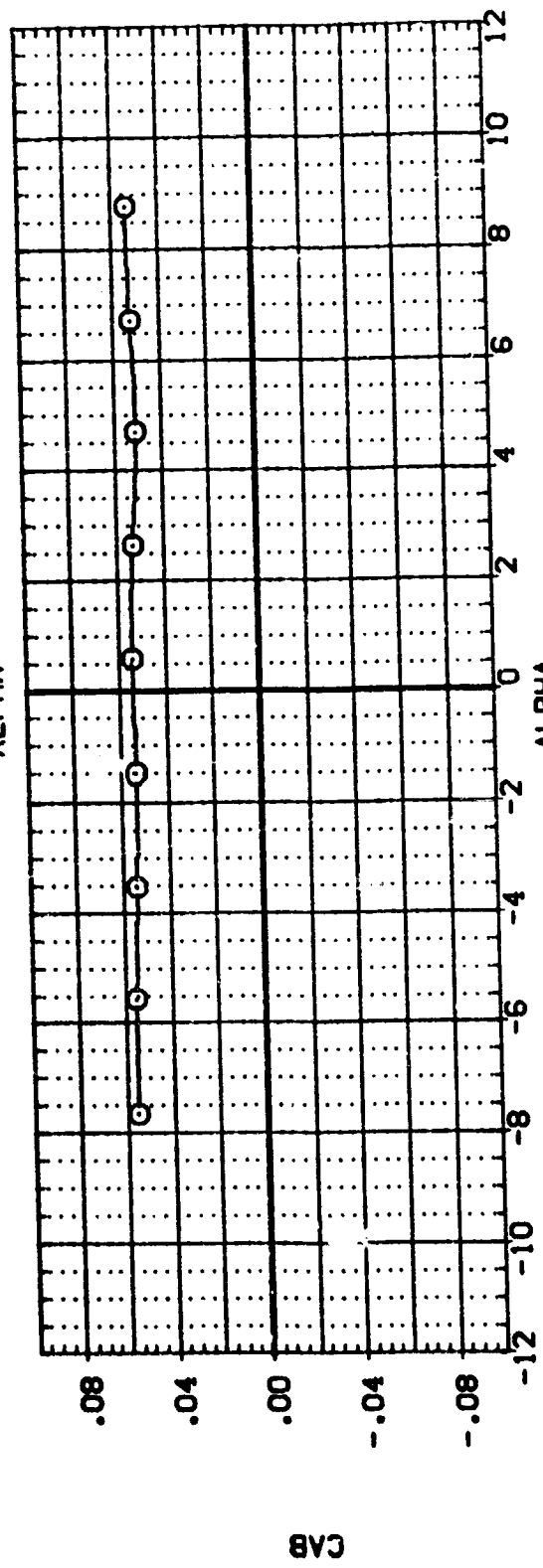
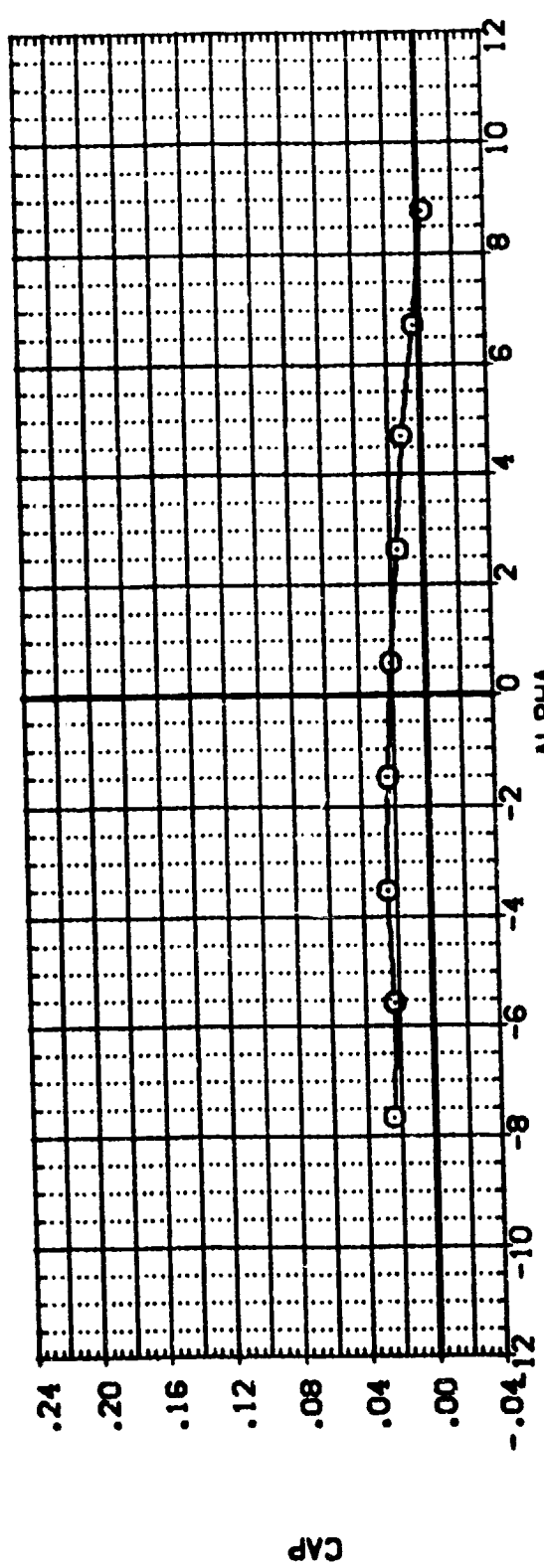
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(F)MACH = 1.97

DATA SET SYMBOL: (886005) (886008)
 CONFIGURATION DESCRIPTION: MSFC 5801(A48) (C24)(TS)(S12)
 DATA NOT AVAILABLE

BETA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 5.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0010



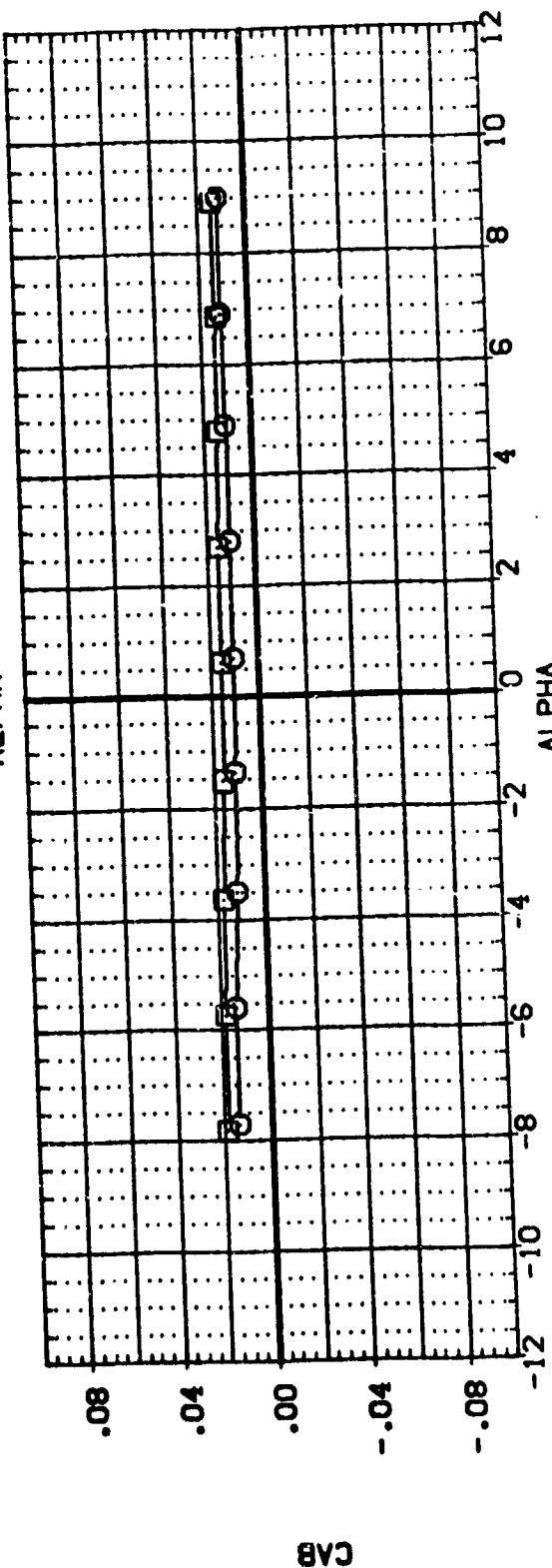
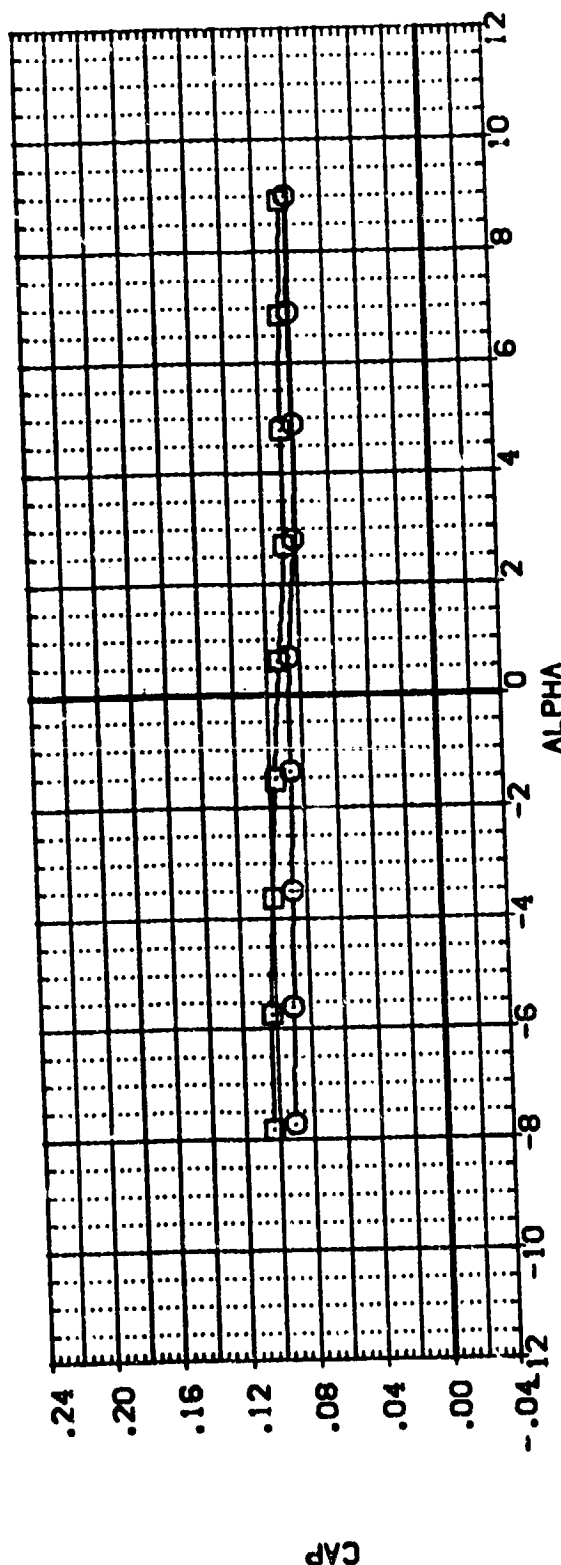
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(A)MACH = .60



DATA SET SYMBOL: (B69005) (B69008)
 CONFIGURATION DESCRIPTION: MSFC 5801(A48) (0341)(T9)(S12) (ATTACH POST OFF)
 REFERENCE INFORMATION:
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 YMRP: 2.7200 IN.
 ZMRP: .0000 IN.
 SCALE: .0040

BETA: .000
 ORBINC: .000



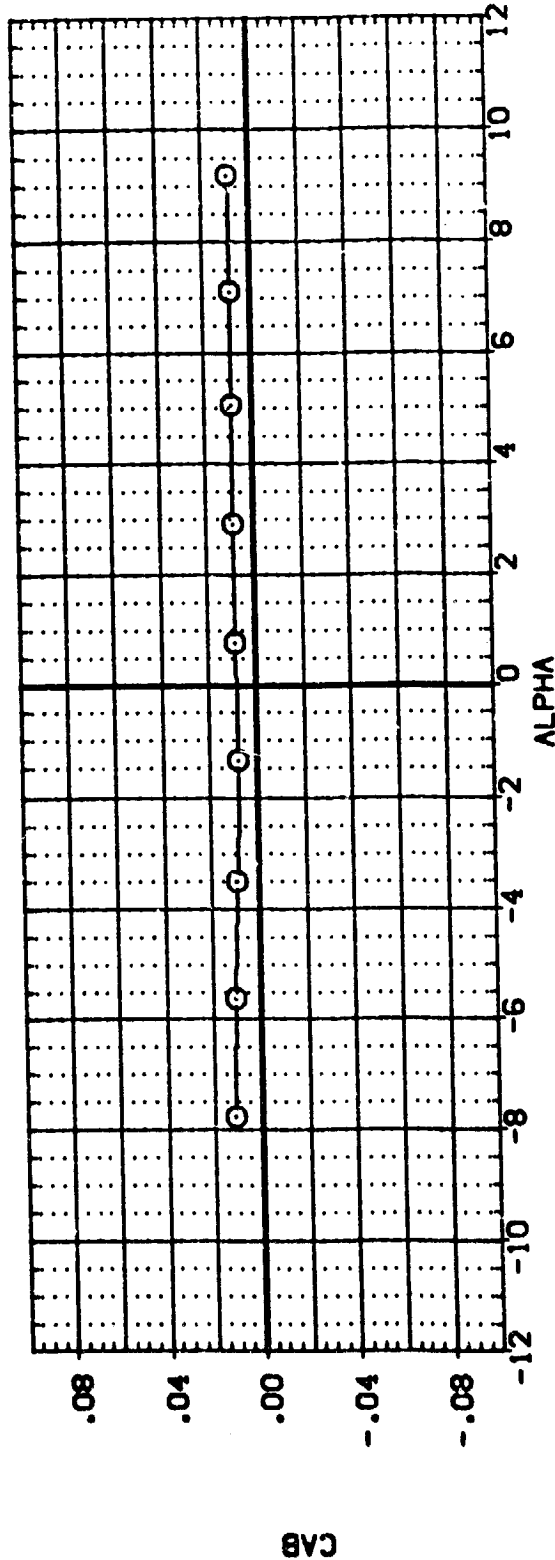
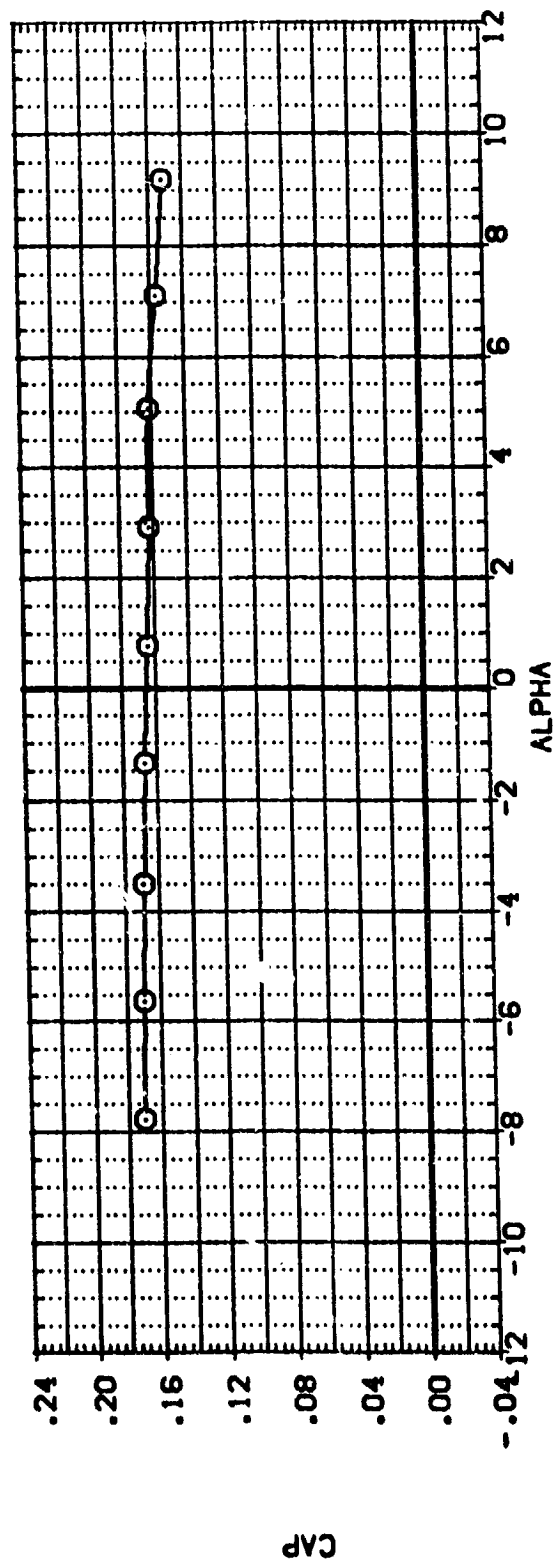
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(B)MACH = .90

DATA SET SYMBOL: (B85005)
 (B85008)
 CONFIGURATION DESCRIPTION: MSFC 560(1A48) (C341)(T91)(S12)
 DATA NOT AVAILABLE

BETA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 5.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

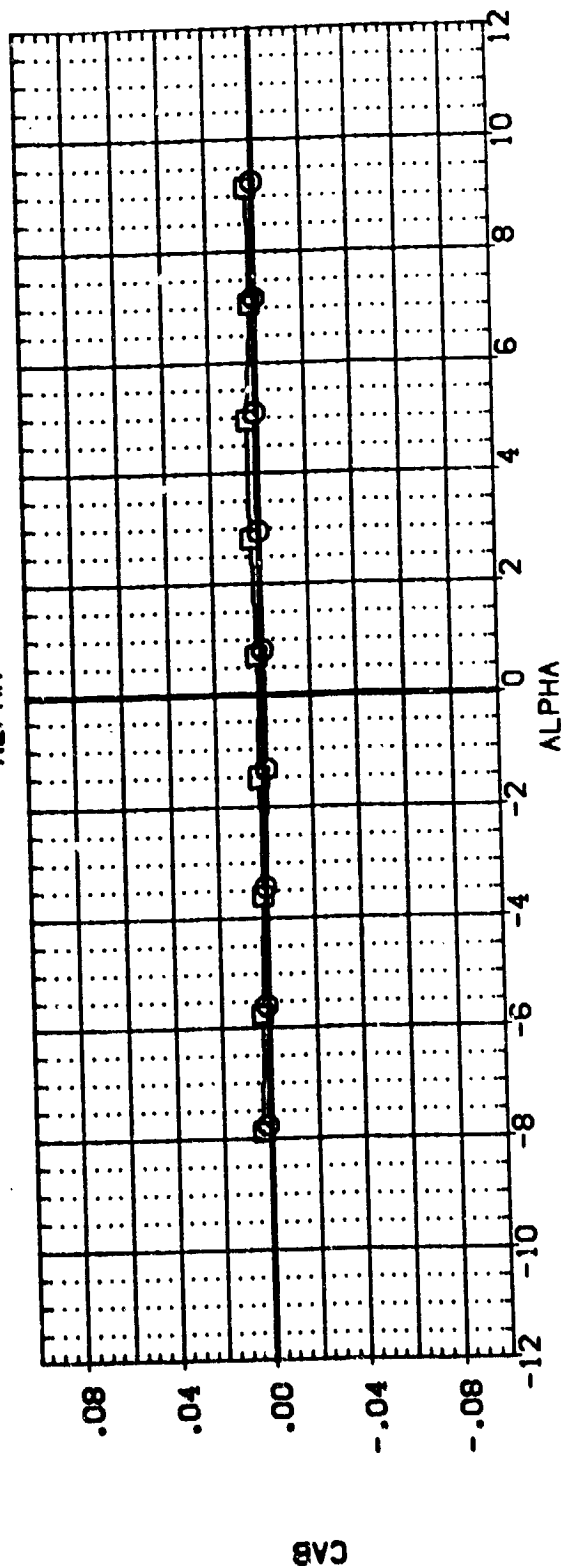
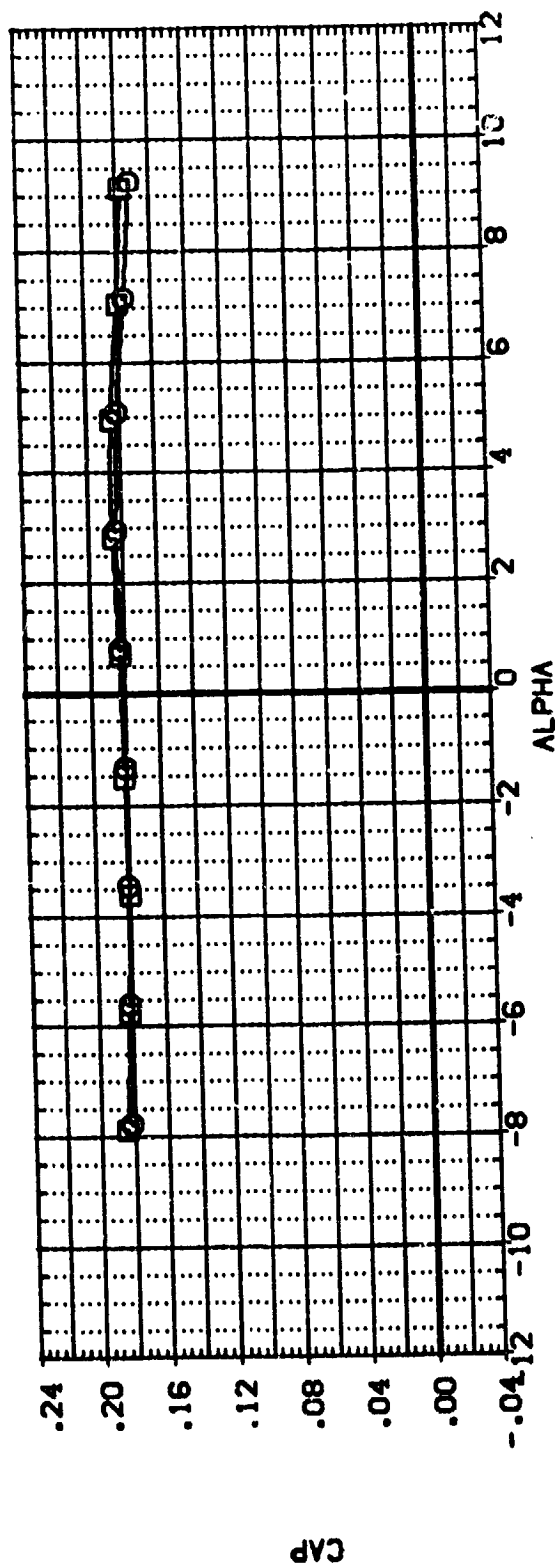
(C)MACH = 1.10

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

(ATTACH POST OFF)

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88005) MSFC 5801(A48) (034)(TS)(S12)
 (B88008) MSFC 5801(A48) (034)(TS)(S12)



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(D)MACH = 1.25

DATA SET SYMBOL: (888005) (888008) (888005) (888008)

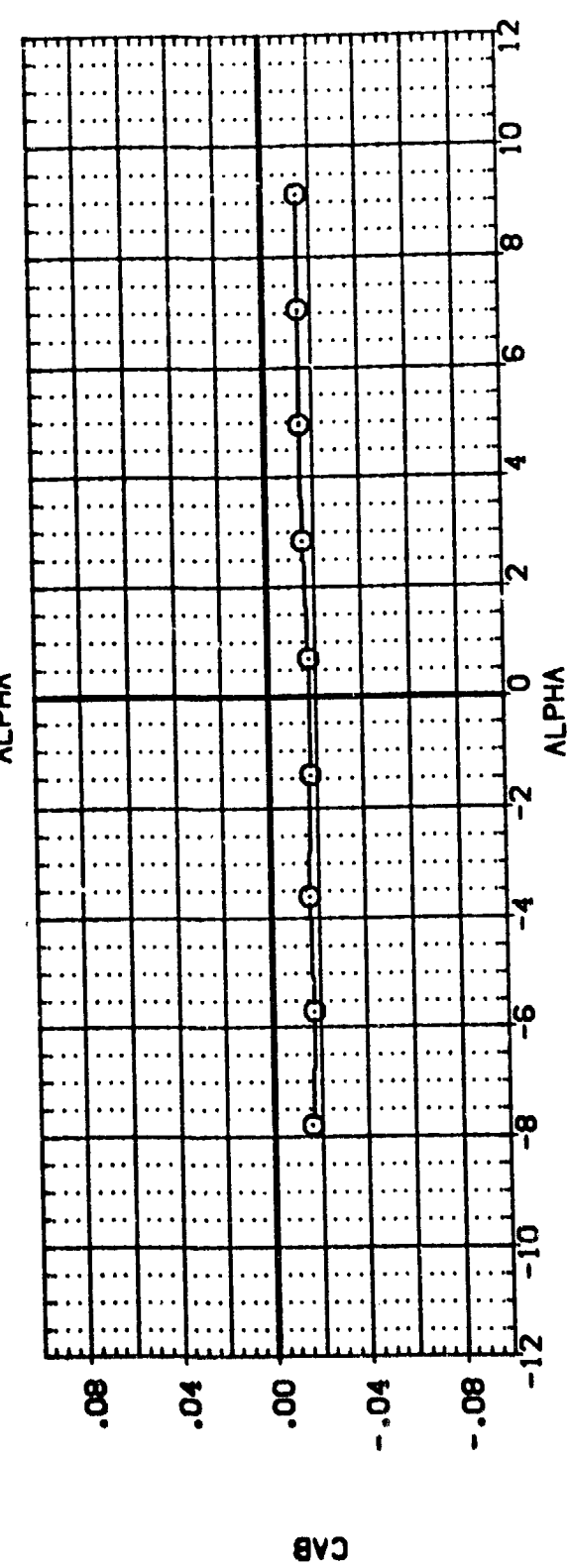
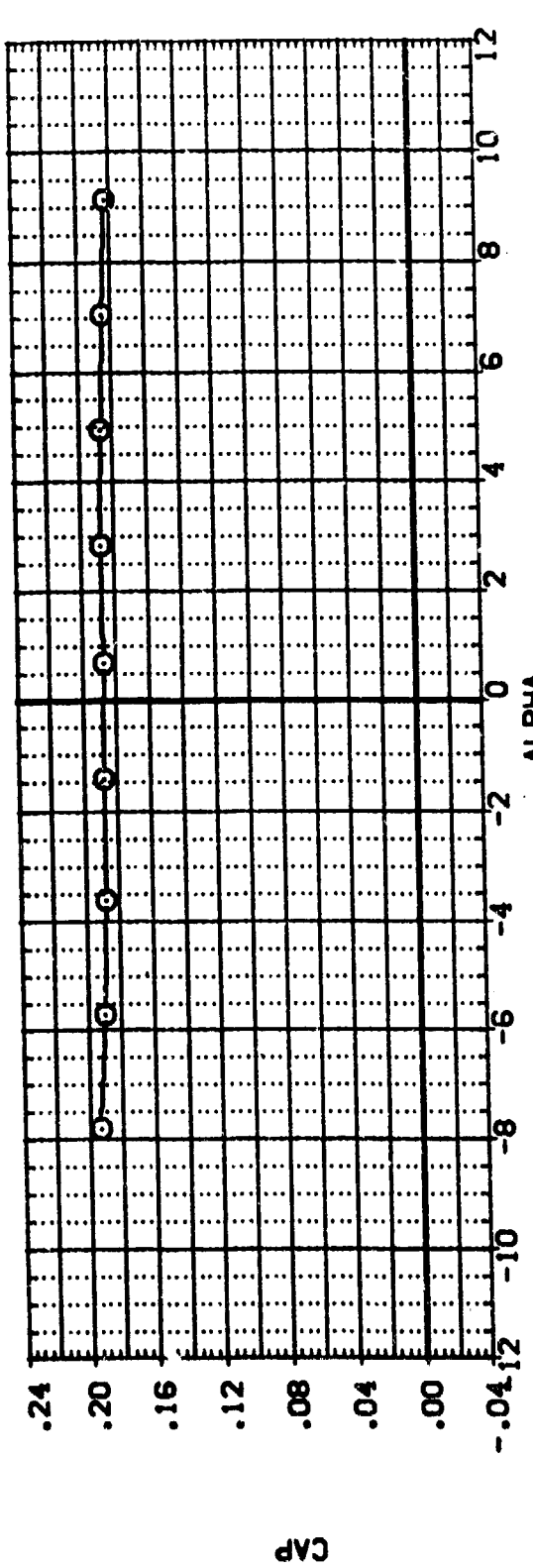
CONFIGURATION DESCRIPTION: MSFC 580(1448) (034)(T9)(S12) DATA NOT AVAILABLE

BETA: .000 .000 .000 .000

ORBITAL: .000 .000 .000 .000

REFERENCE INFORMATION:

SREF	6.1990	SO. IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
APRP	2.7200	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



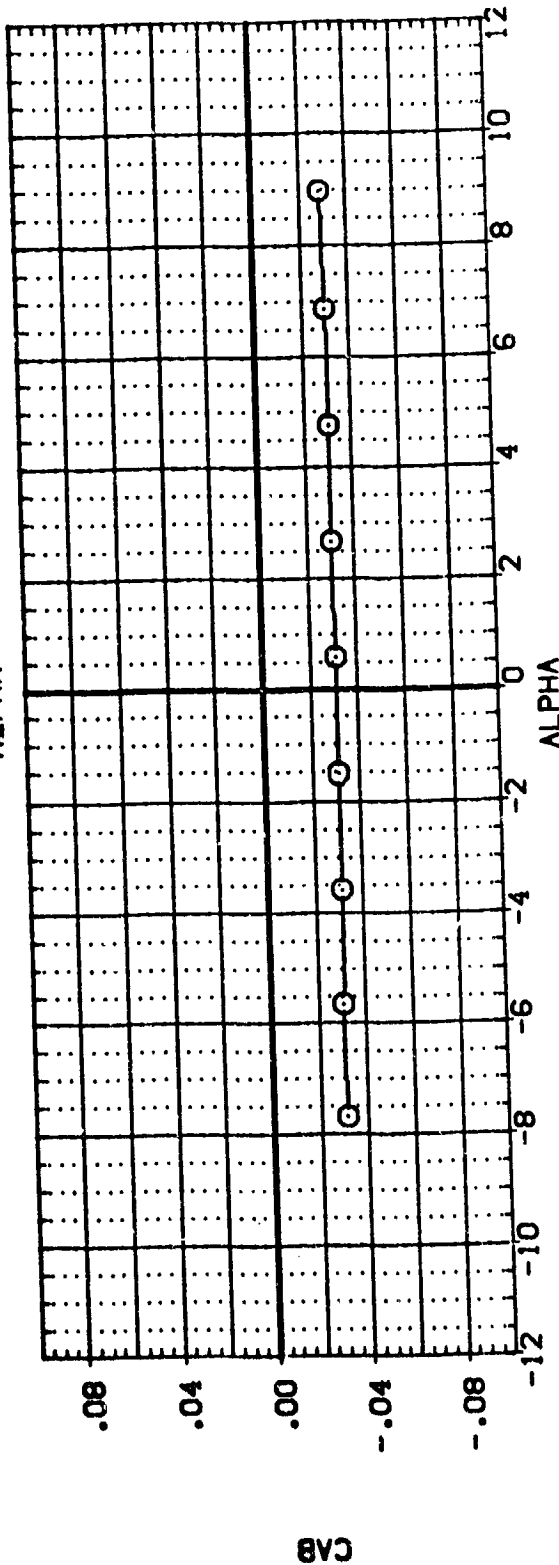
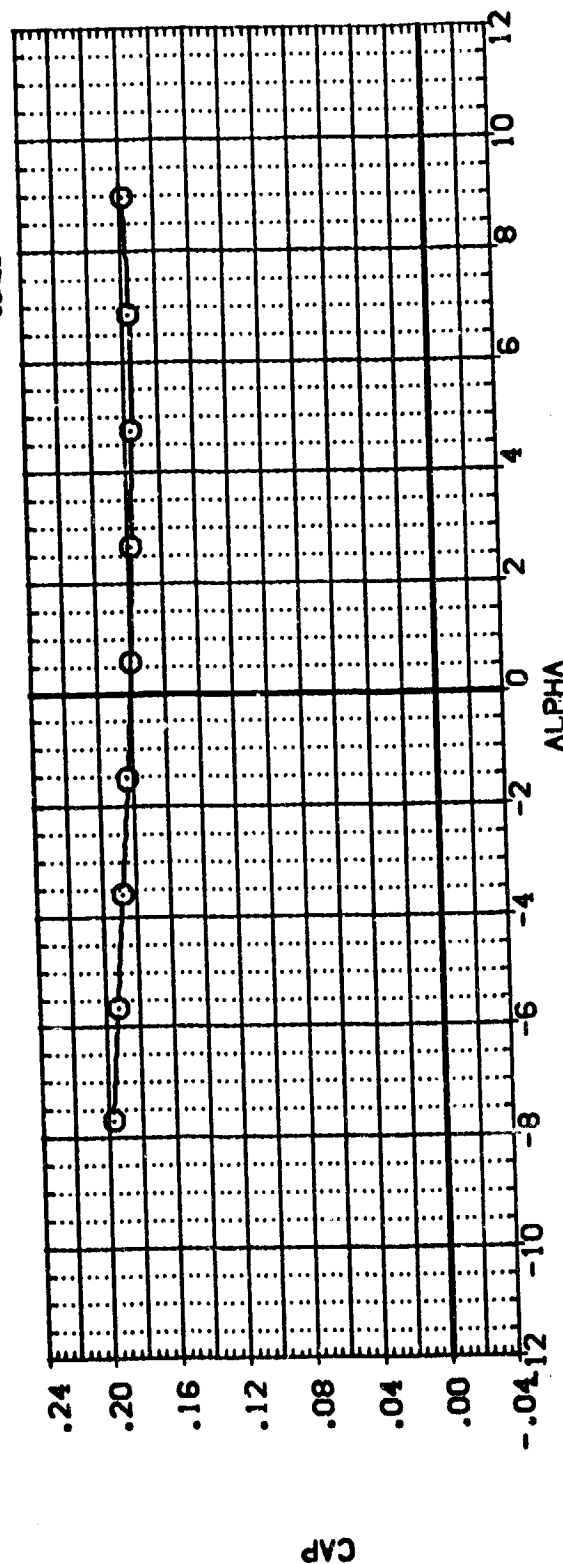
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER



DATA SET SYM-80L CONFIGURATION DESCRIPTION
(885005) MSFC 580(1A48) (034)(19)(S12)
(885008) DATA NOT AVAILABLE

BETA ORBINC
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 5.1580 SQ.IN.
LREF 5.1500 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040

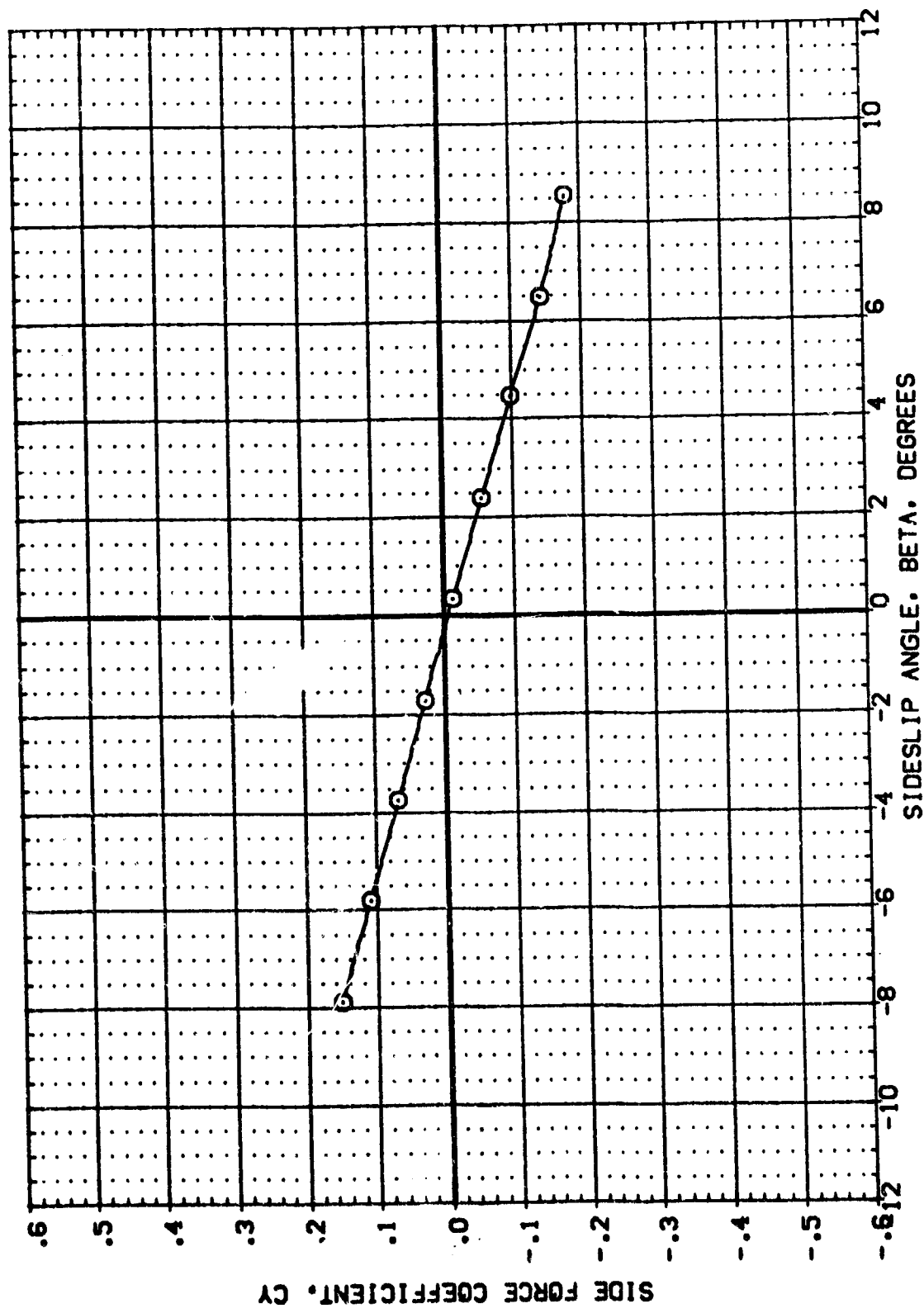


EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

DATA SET SYMBOL (889006) (889007)
 CONFIGURATION DESCRIPTION MSFC 580(1A48) (034)(19)(S12) DATA NOT AVAILABLE

ALPHA ORBING
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XGRP 2.7200 IN.
 YGRP .0000 IN.
 ZGRP .0000 IN.
 SCALE .0040

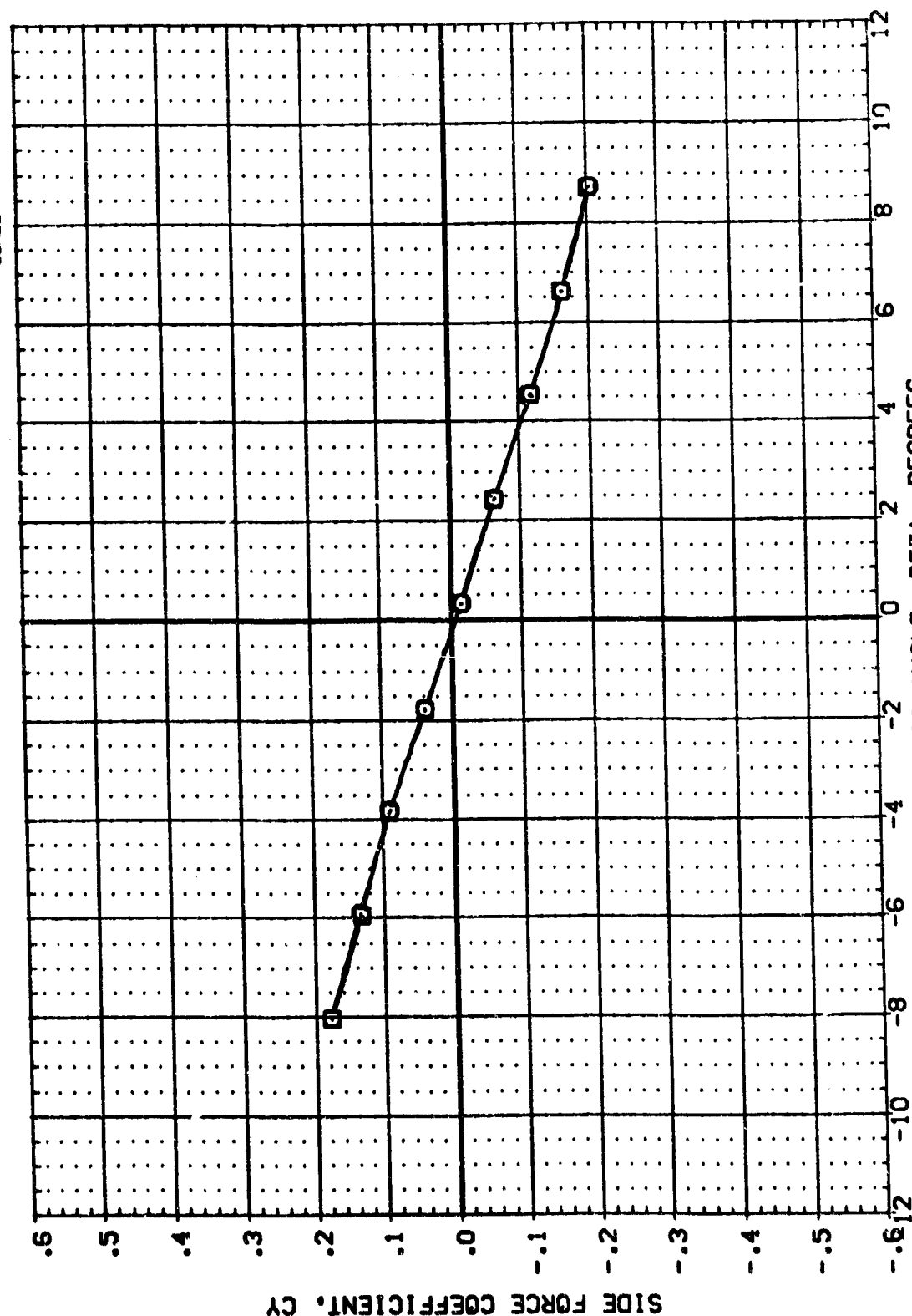


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YPRP 2.7200 IN.
 ZPRP .0000 IN.
 SCALE .0010

ALPHA ORBINC
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (889005) B HSFC 580(I48) (034)(T9)(S12)
 (889007) HSFC 580(I48) (034)(T9)(S12) (ATTACH POST OFF)



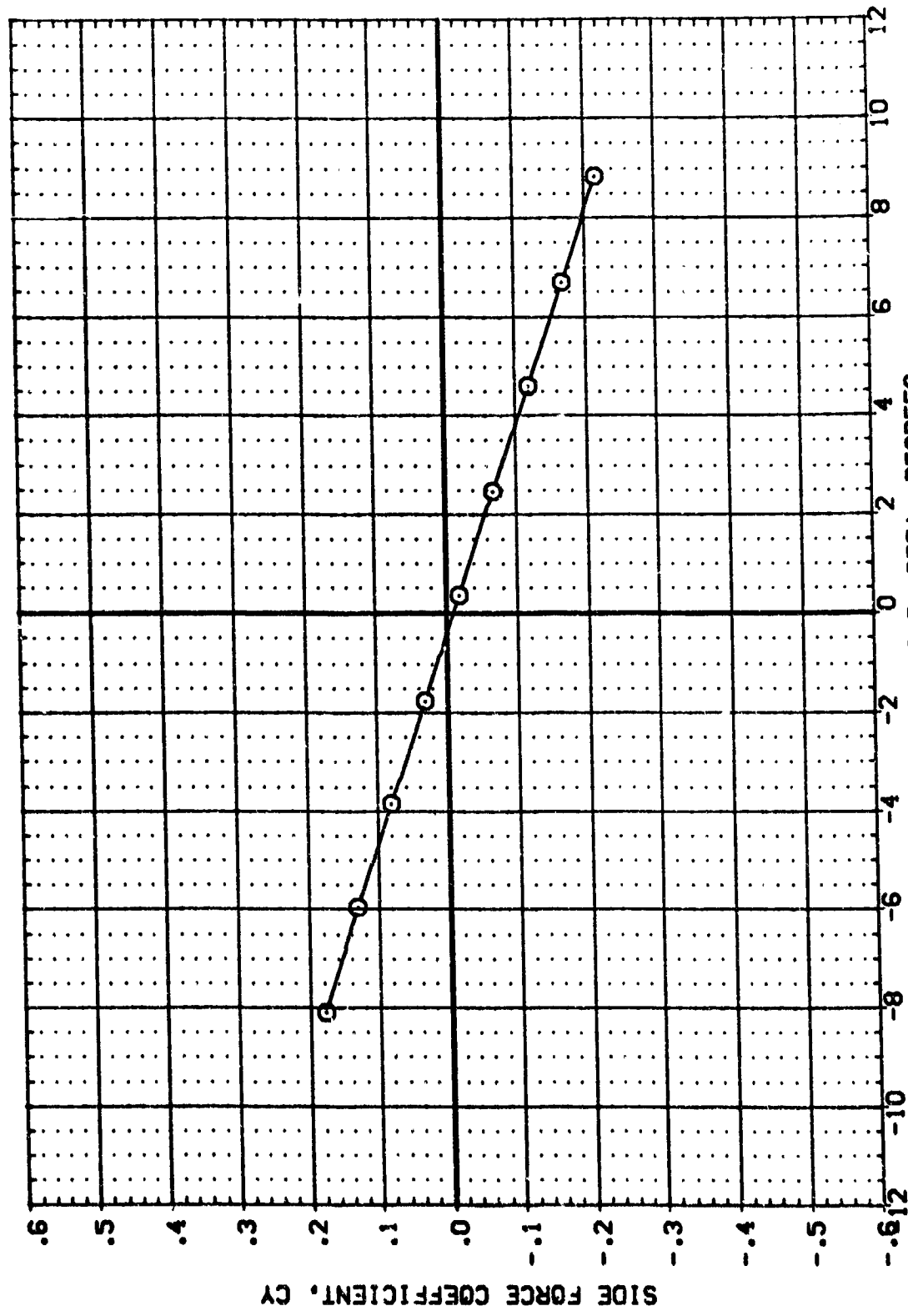
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(B)MACH = .90

DATA SET SYMBOL: 889005
 CONFIGURATION DESCRIPTION: MFC 580(1A48) (034)(T9)(S12)
 DATA NOT AVAILABLE

ALPHA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 6.1880 IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPRP: 2.7200 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0040

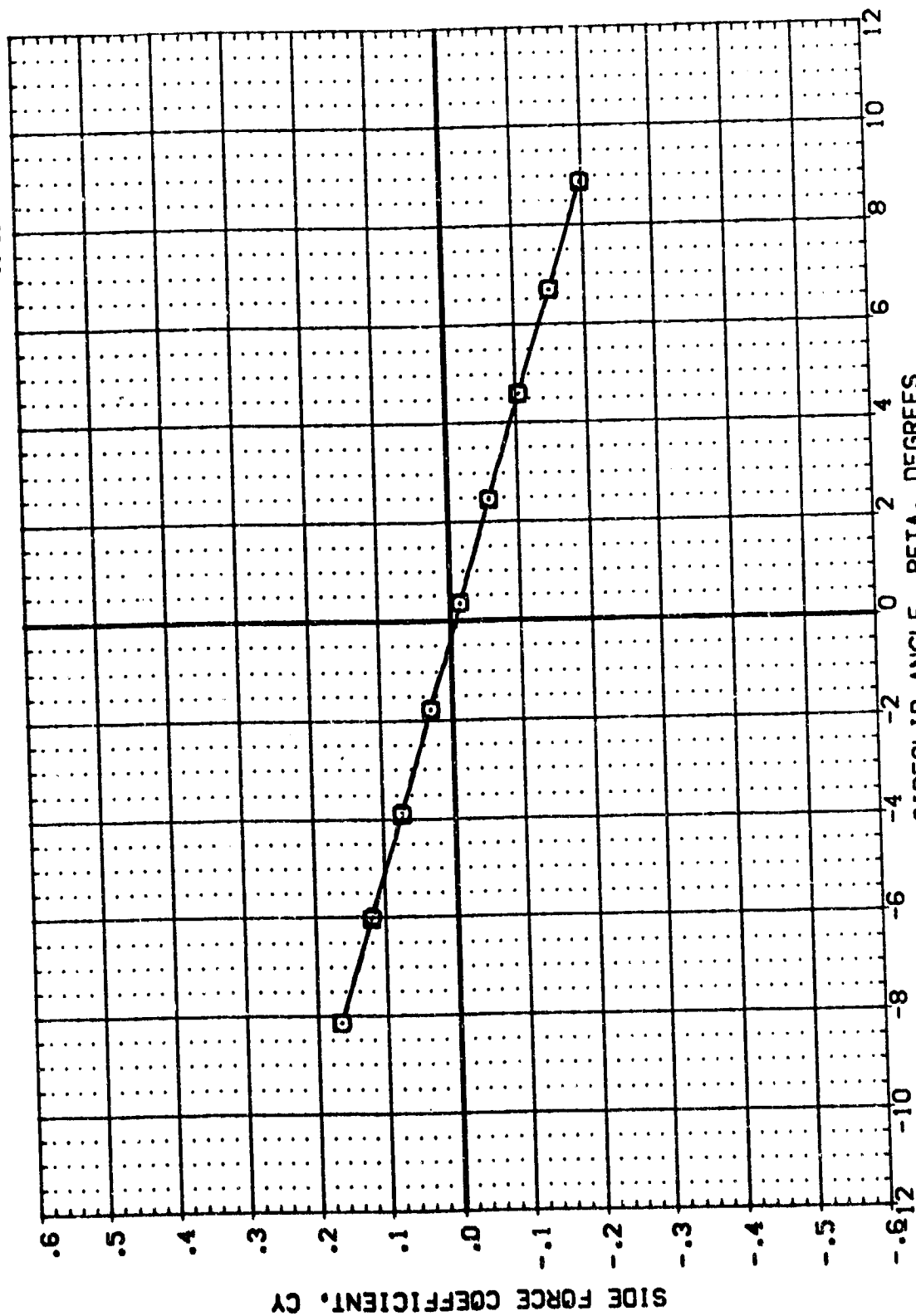


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(C)MACH = 1.10



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBITAL	REFERENCE INFORMATION
(889006)	HSFC 580(1A48) (034)(T9)(S12)	.000	.000	SREF 6.1990 SQ.IN.
(889007)	HSFC 580(1A48) (034)(T9)(S12) (ATTACH POST OFF)	.000	.000	LREF 5.1600 IN.
				BREF 5.1600 IN.
				XPRP 2.7200 IN.
				YPRP .0000 IN.
				ZPRP .0000 IN.
				SCALE .0040



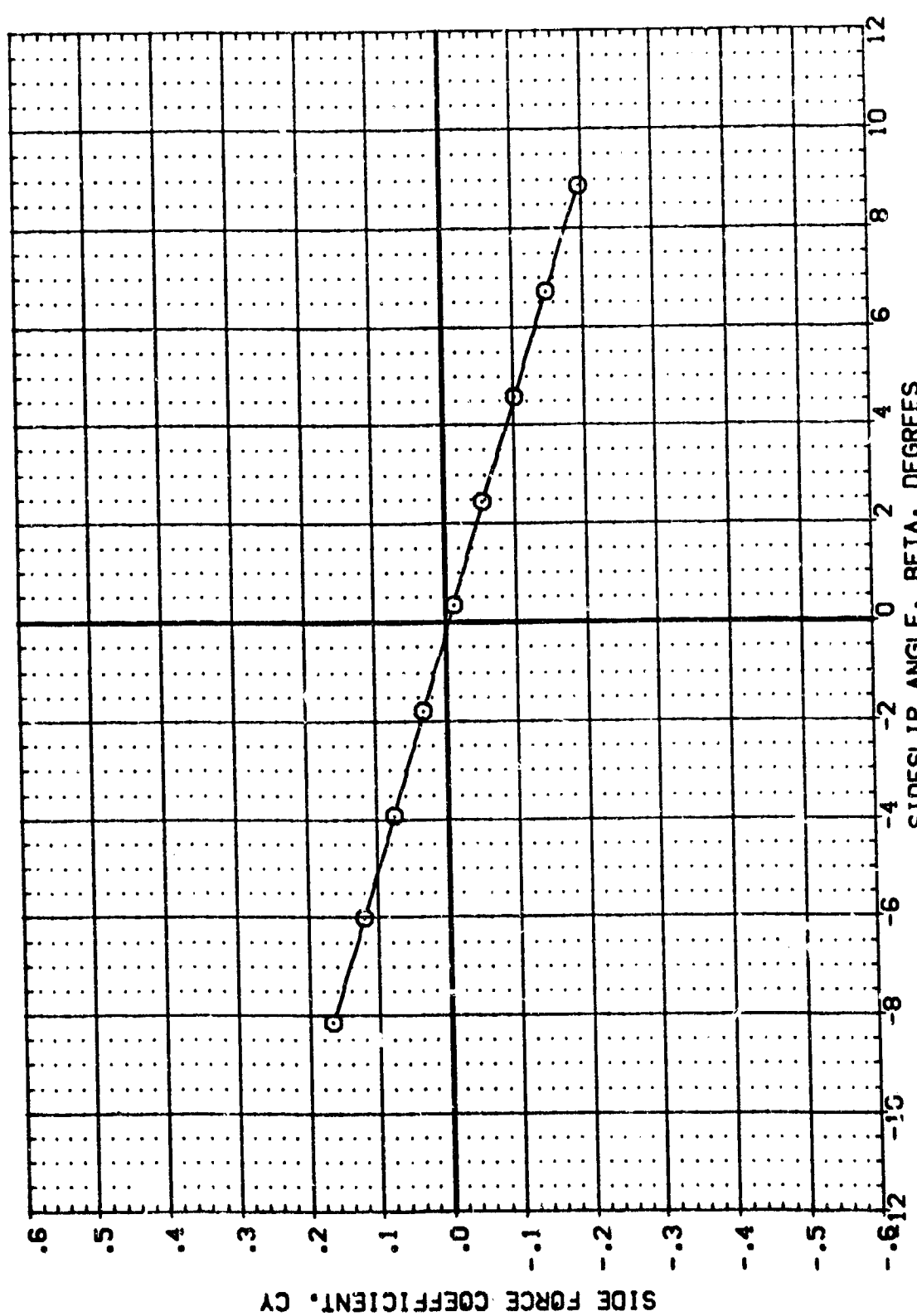
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(0)MACH = 1.25

DATA SET SYMBOL: (B63006)
 CONFIGURATION DESCRIPTION: NSFC 580(1A48) (034)(179)(S12)
 DATA NOT AVAILABLE

ALPHA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 6.1980 IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040

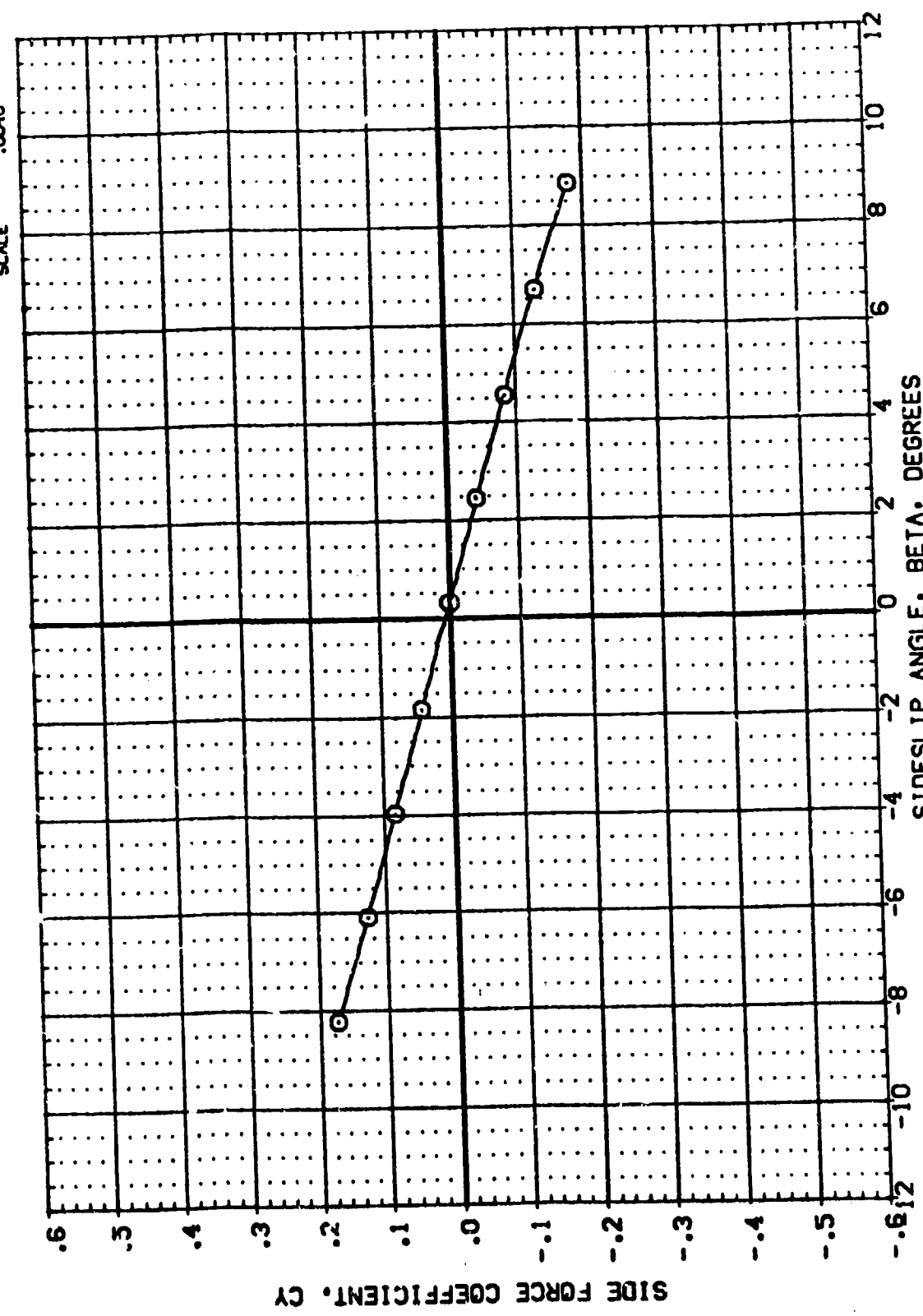


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

DATA SET SYMBOL: MSFC 580(1448) (C34)(19)(S12)
 (085006) (085007) DATA NOT AVAILABLE

ALPHA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YMRP 2.7200 IN.
 ZMRP .0000 IN.
 SCALE .0040



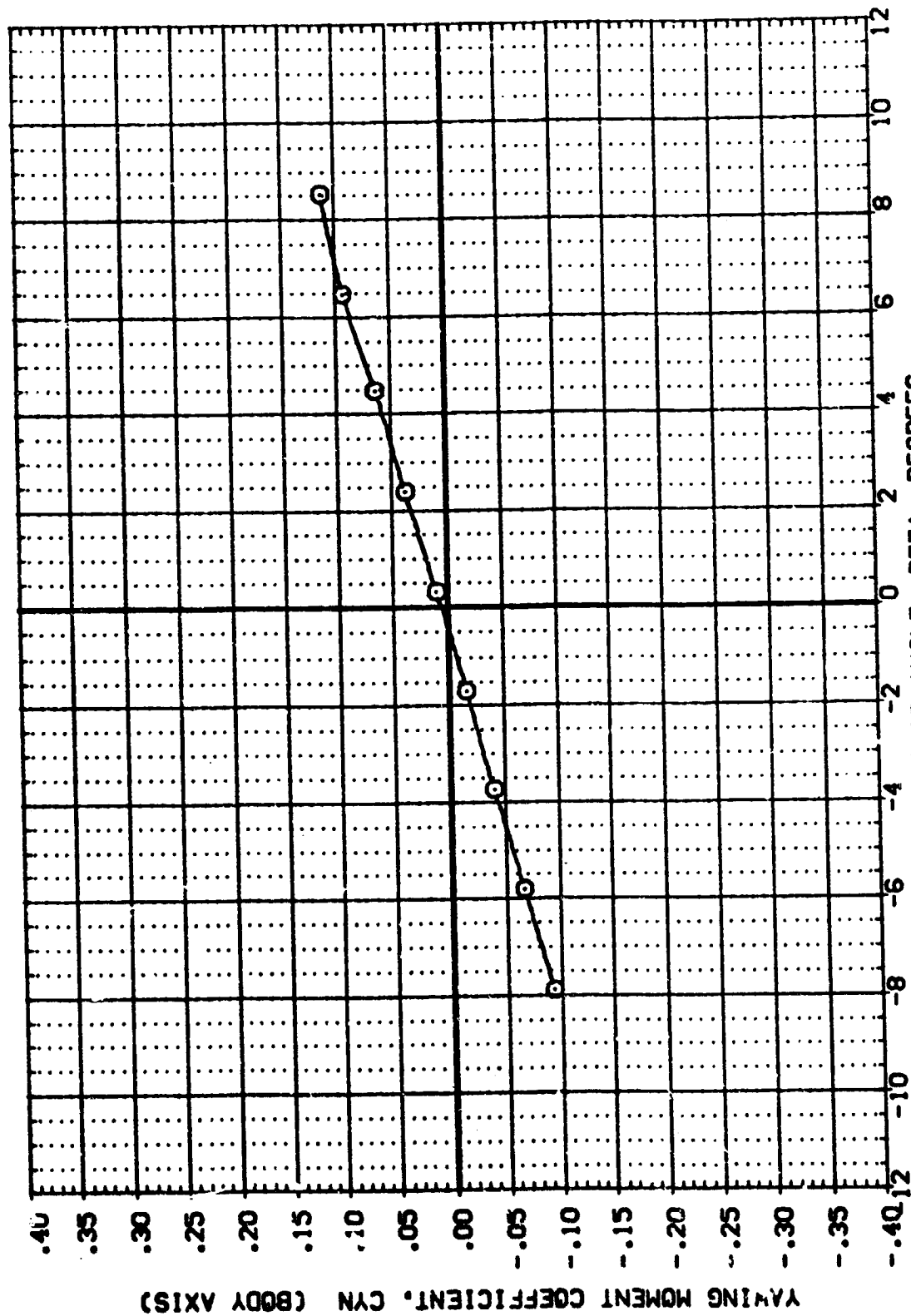
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(F)MACH = 1.96

DATA SET SYMBOL: 8880037
 CONFIGURATION DESCRIPTION: MSFC 580(1A48) (034)(19)(S12)
 DATA NOT AVAILABLE

ALPHA: .000
 ORB INC: .000

REFERENCE INFORMATION
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPRP: 2.7200 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0010



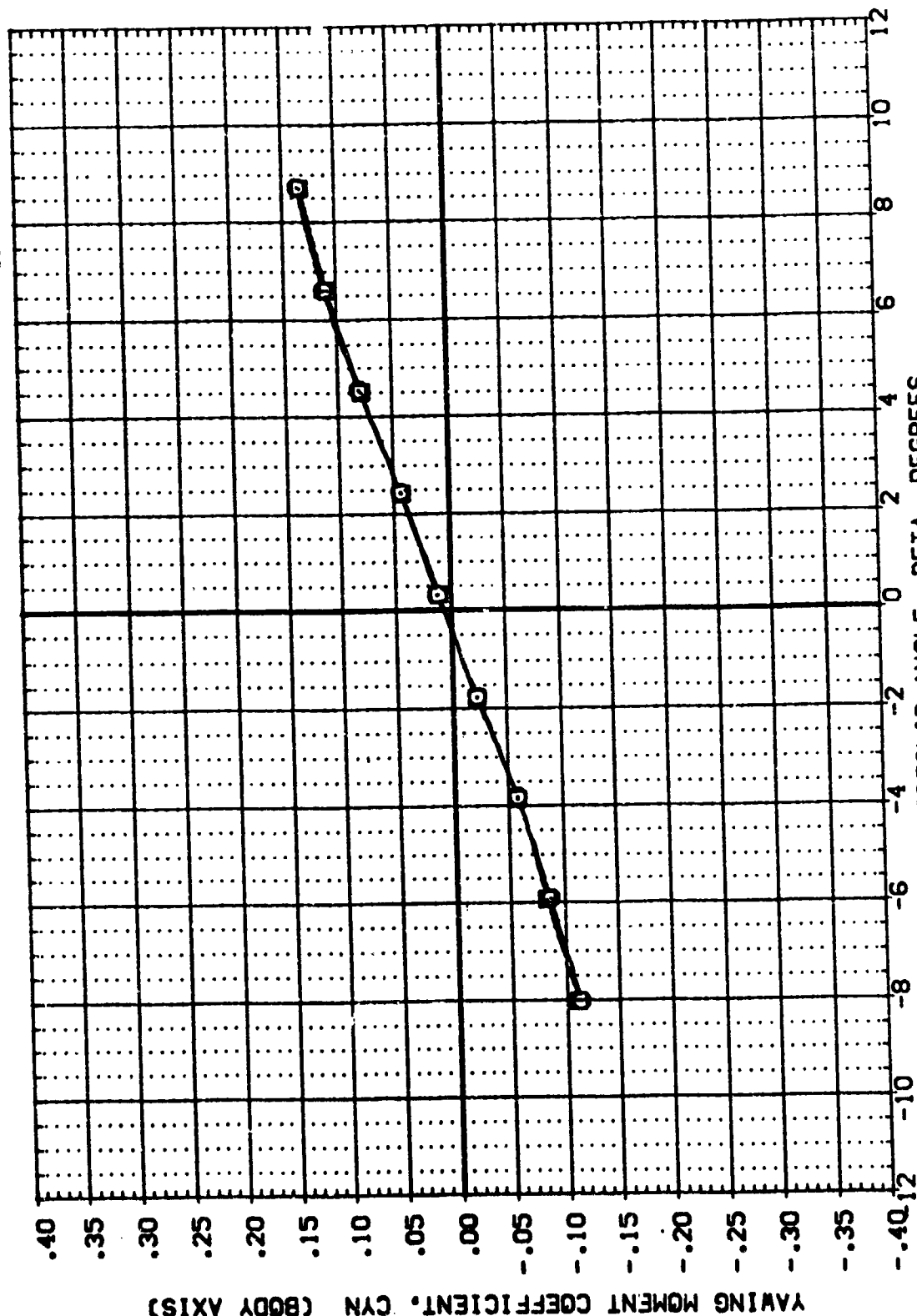
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(M)MACH = .60

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885005) MSFC 580(1A48) (034)(19)(S12)
 (885007) MSFC 580(1A48) (034)(19)(S12) (ATTACH POST OFF)



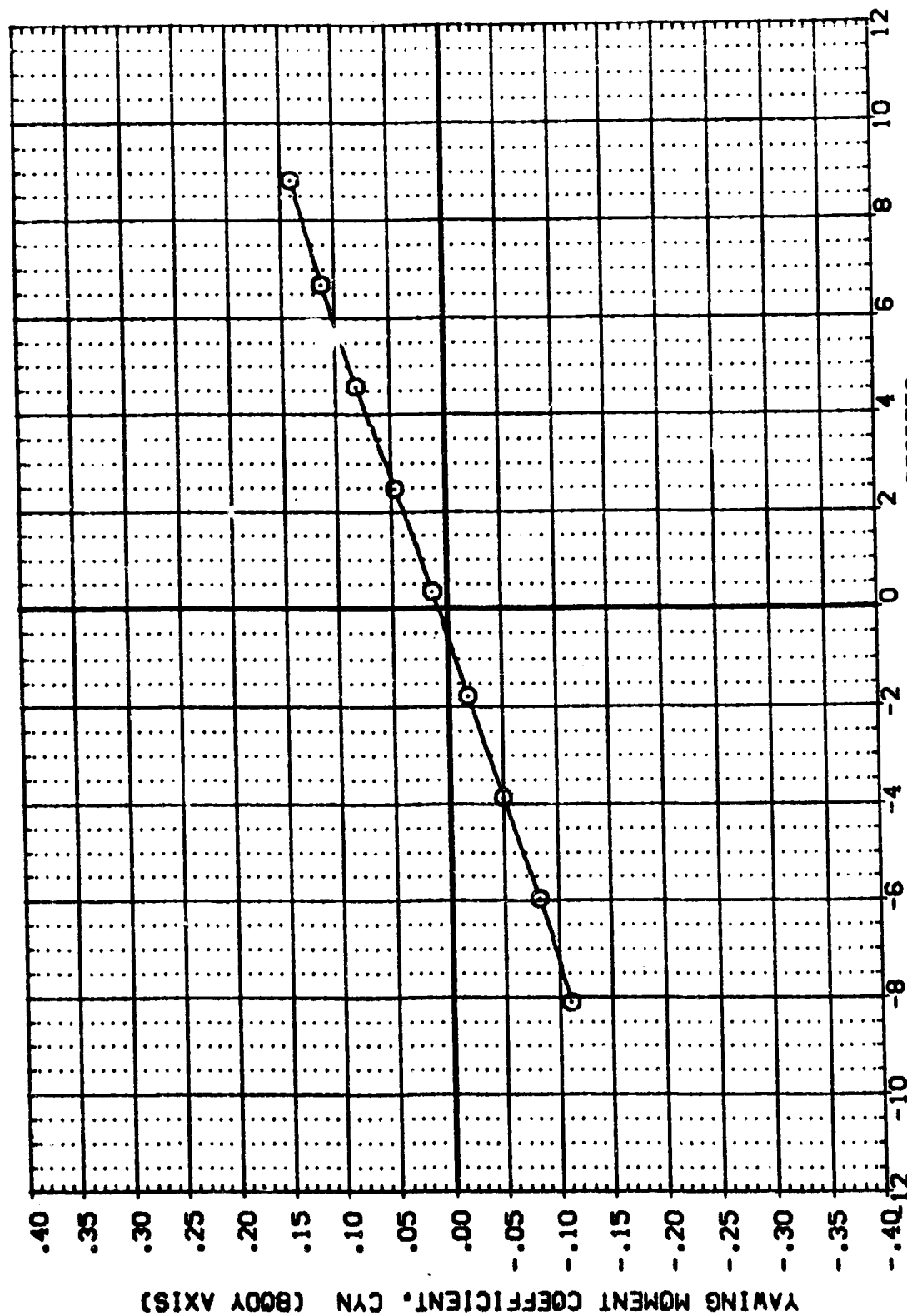
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B85005) MSFC 580(1A48) (034)(TS)(S12)
 (B85007) DATA NOT AVAILABLE

ALPHA DB11NC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(C)MACH = 1.10



DATA SET SYMBOL CONFIGURATION DESCRIPTION ALPHA ORBITAL

(885005) □ MSFC 580(1A48) (034)(TS)(S12) .000 .000

(885007) MSFC 580(1A18) (034)(TS)(S12) (ATTACH POST OFF) .000 .000

REFERENCE INFORMATION

SREF 6.1980 SQ.IN.

LREF 5.1600 IN.

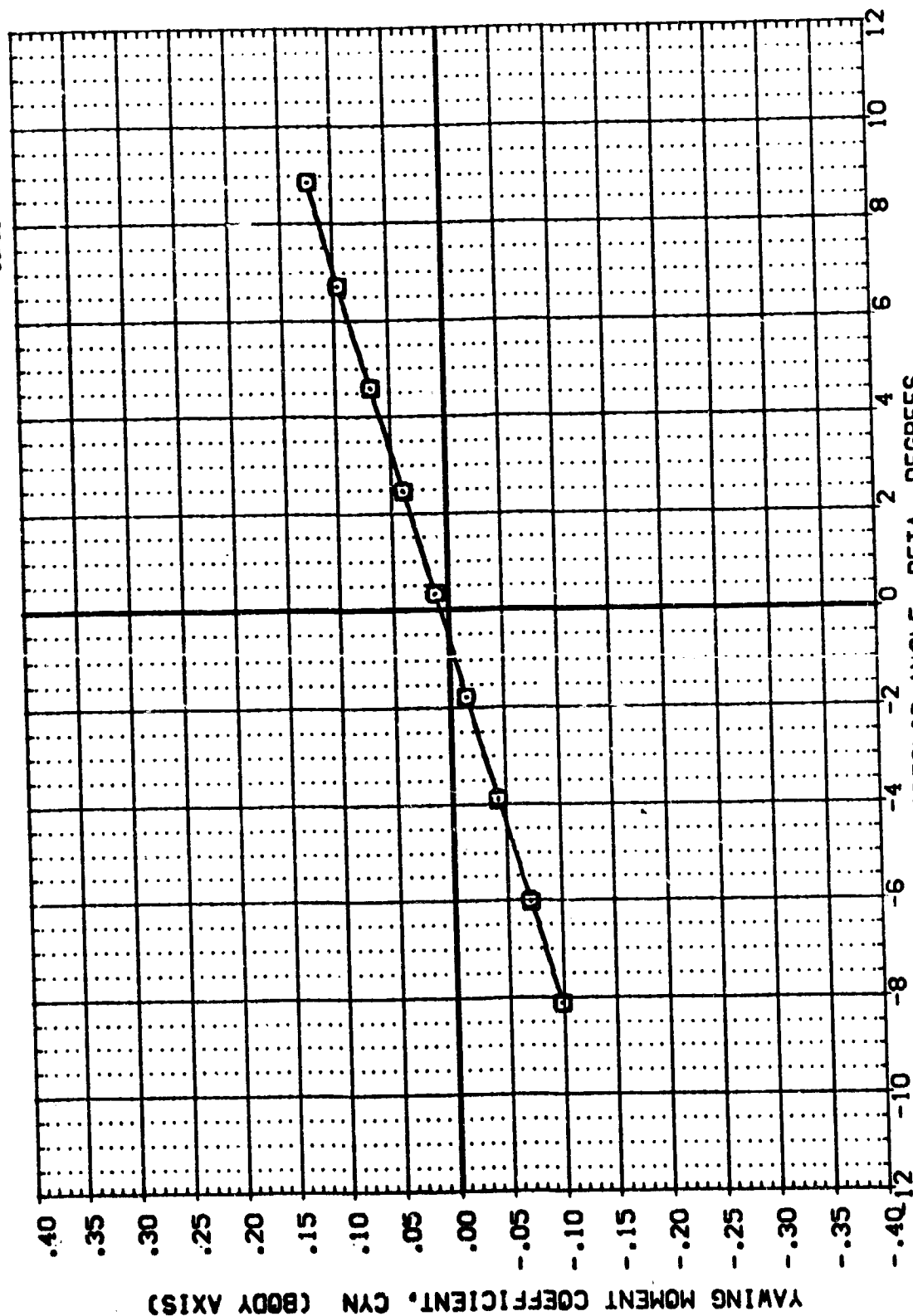
BREF 5.1600 IN.

XPRP 2.7200 IN.

YPRP .0000 IN.

ZPRP .0000 IN.

SCALE .0010



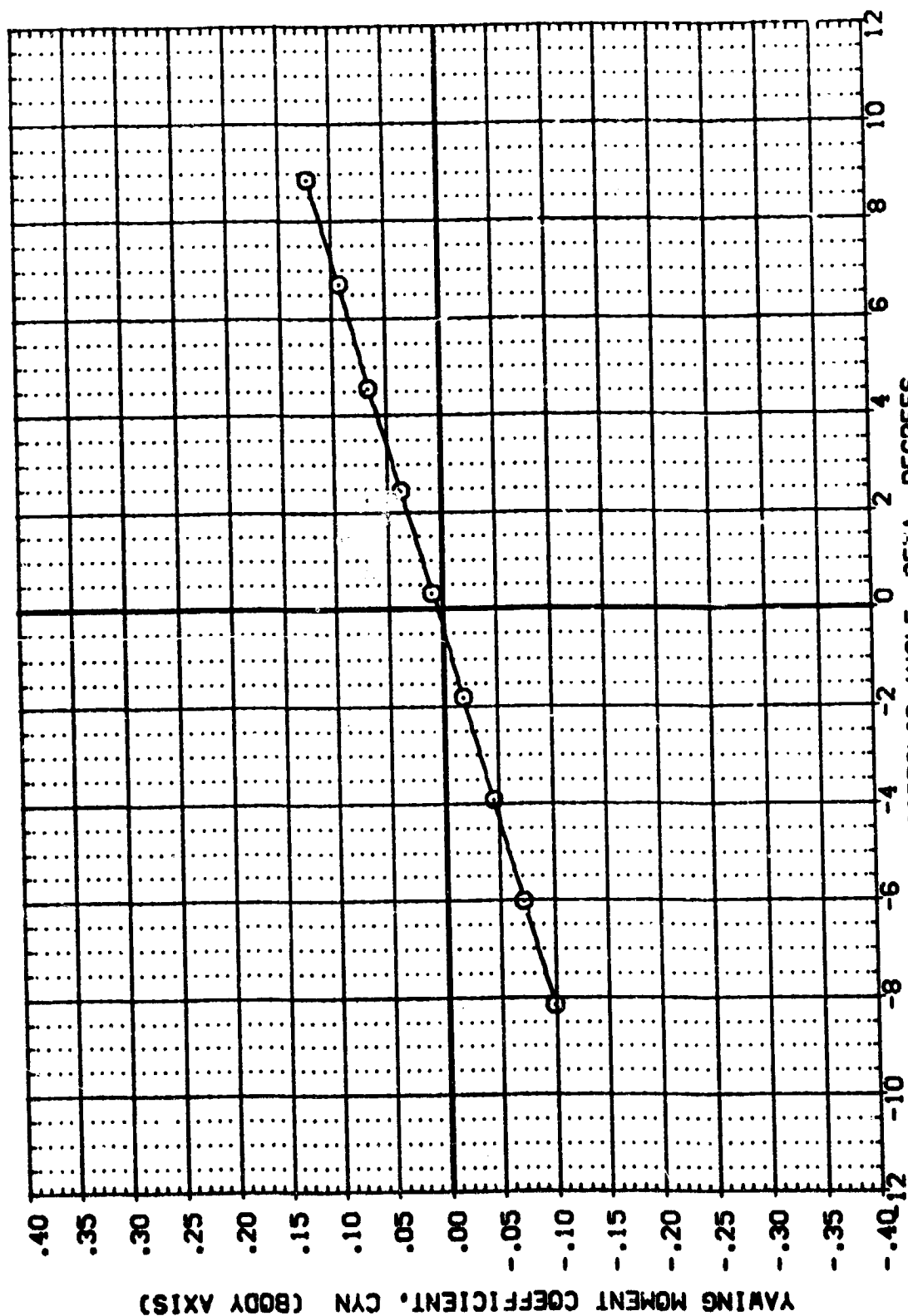
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(O)MACH = 1.25

REFERENCE INFORMATION
 SREF 6.1800 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888006) MSFC 580(148) (034)(19)(S12)
 (888007) DATA NOT AVAILABLE



SIDESLIP ANGLE, BETA, DEGREES

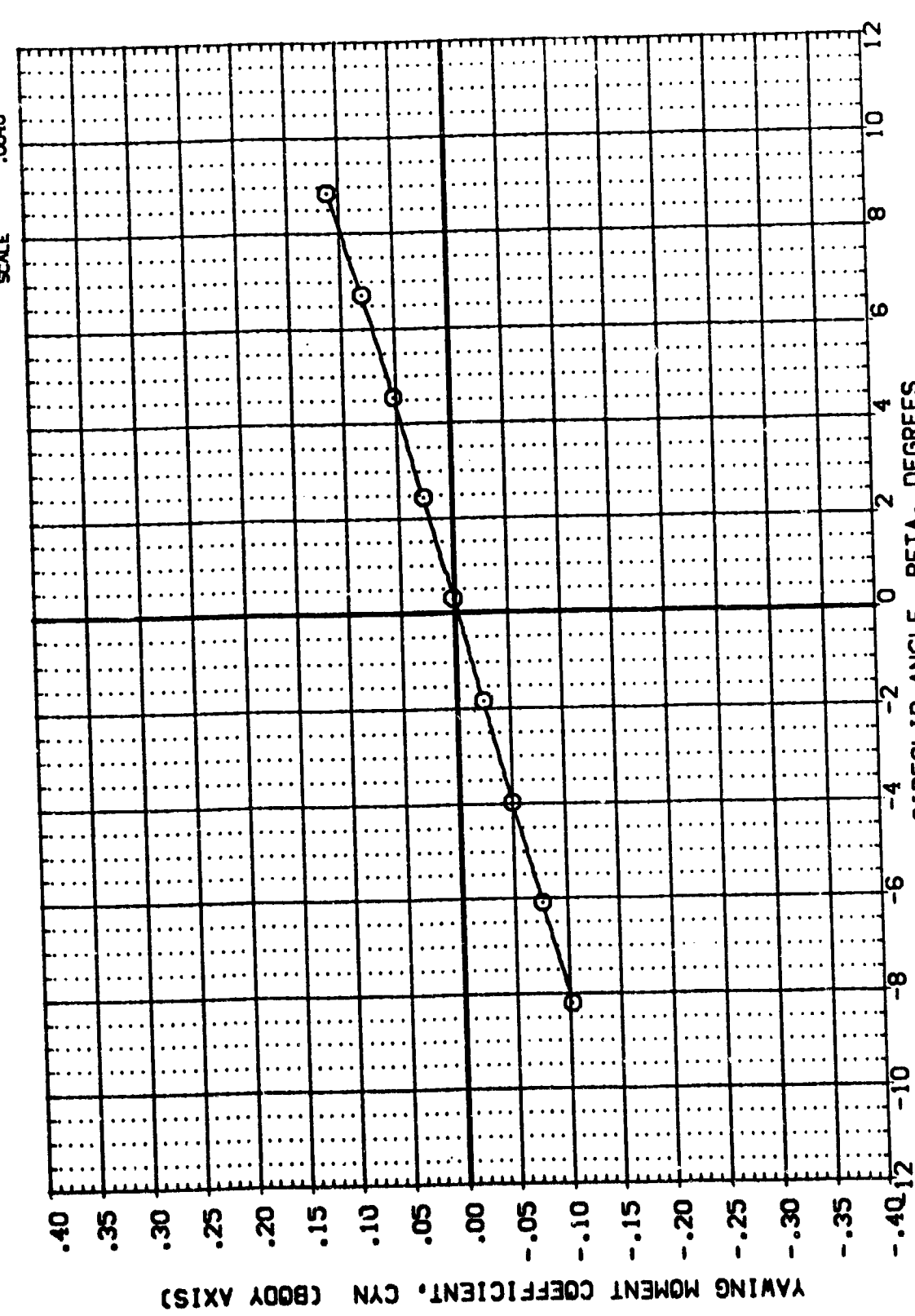
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(E)MACH = 1.46

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

ALPHA ORBING
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B82005) MSFC 5801(A48) (034)(19)(S12)
 (B82007) DATA NOT AVAILABLE



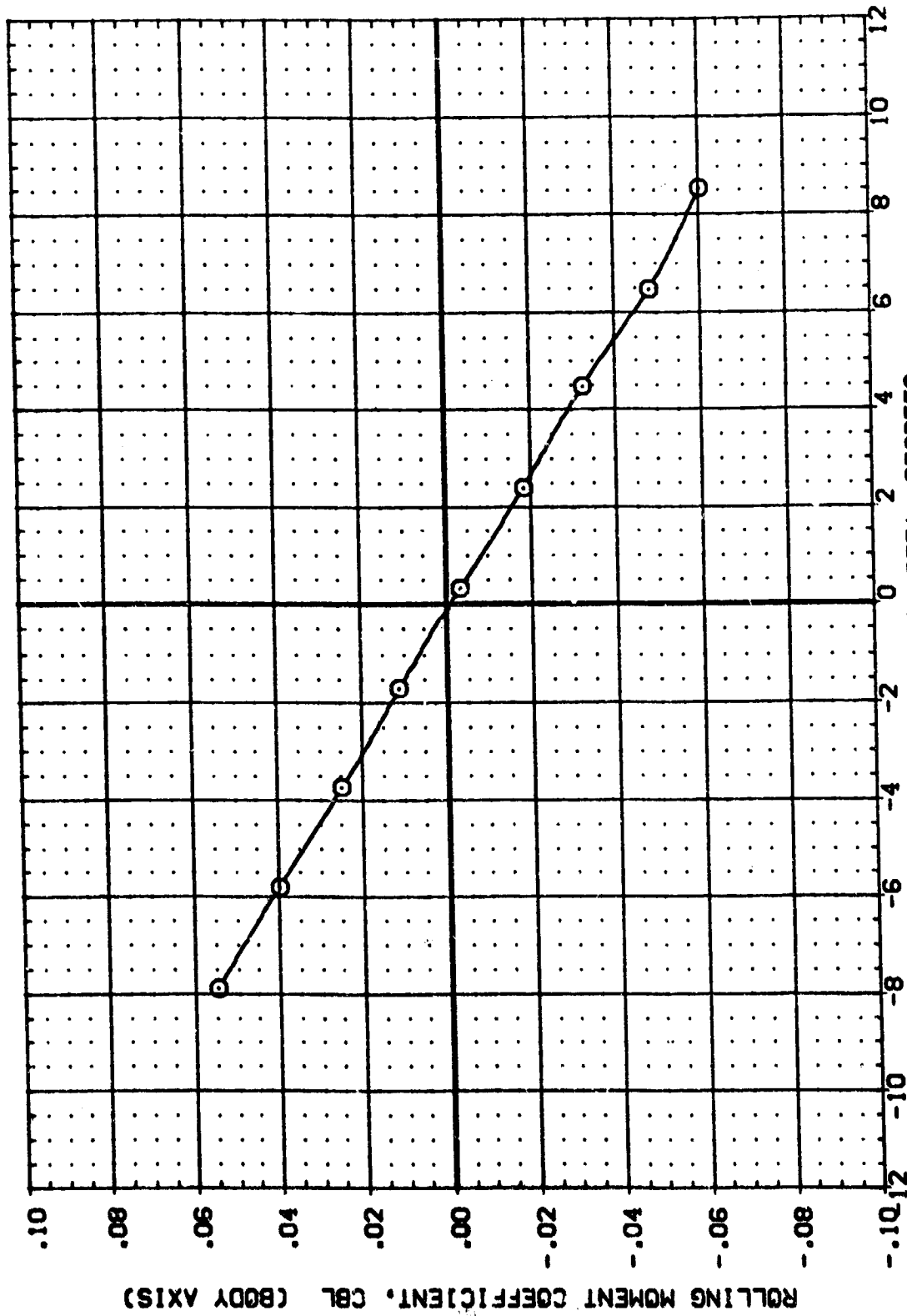
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(F)MACH = 1.96

DATA SET SYMBOL: ☐ CONFIGURATION DESCRIPTION:
 (880006) HSFC 580(1A48) (034)(T9)(S12)
 (880007) DATA NOT AVAILABLE

ALPHA ORBINC
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



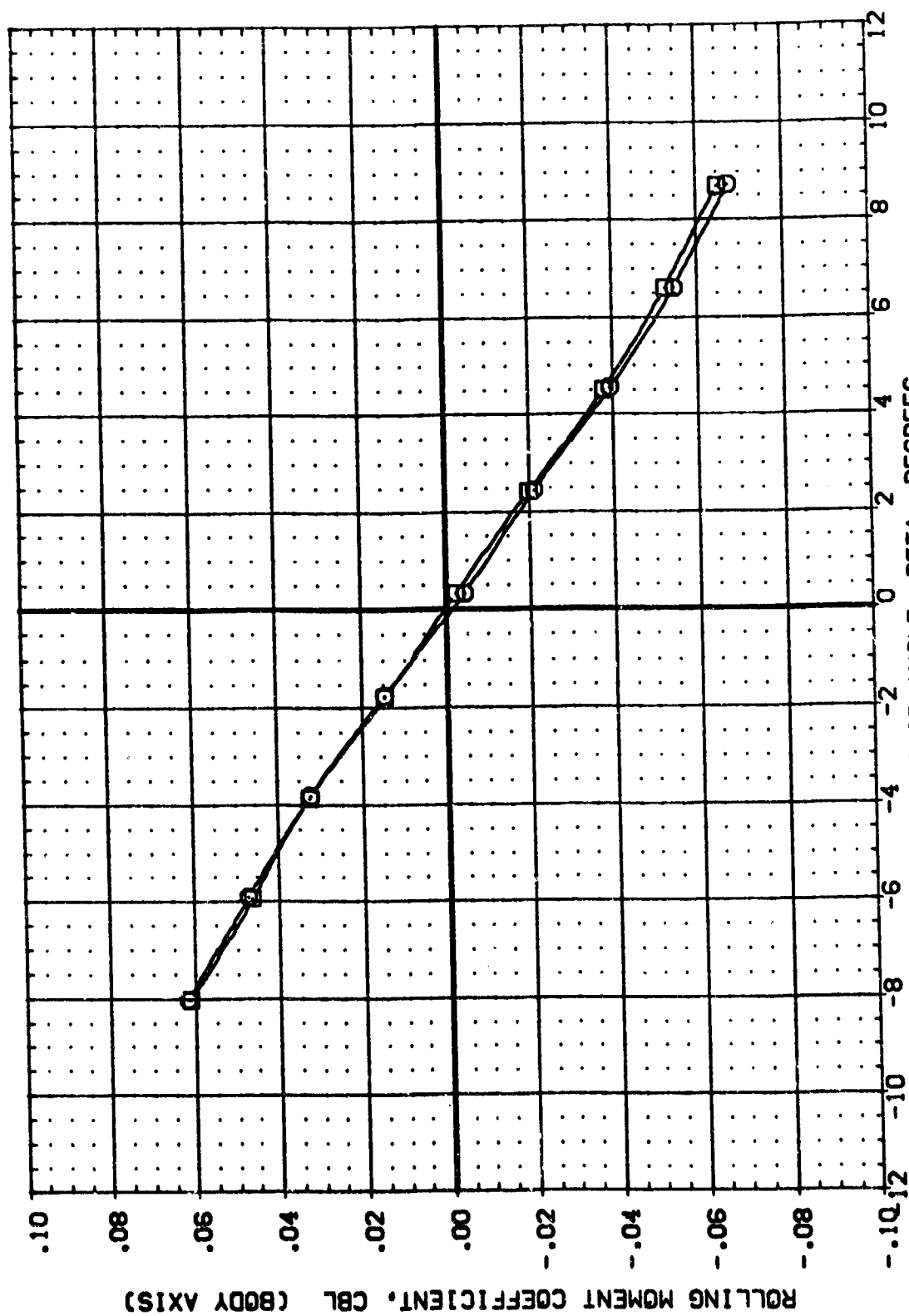
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(A)MACH = .60

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885006) MSFC 580(1A48) (034)(19)(S12)
 (885007) MSFC 580(1A48) (034)(19)(S12) (ATTACH POST OFF)



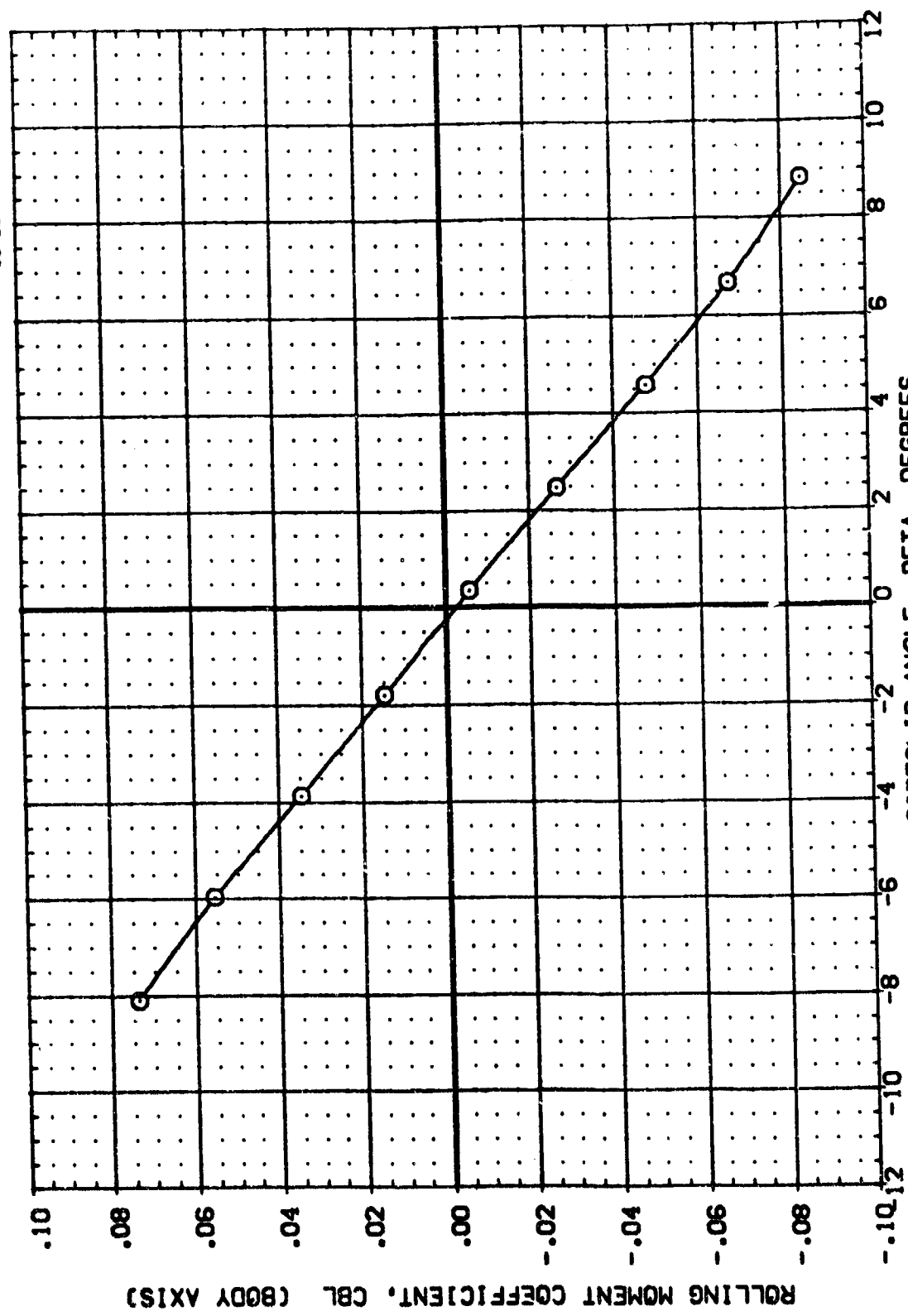
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(B)MACH = .90

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (985006) MSFC 5801(A48) (034)(T9)(S12)
 (985007) DATA NOT AVAILABLE



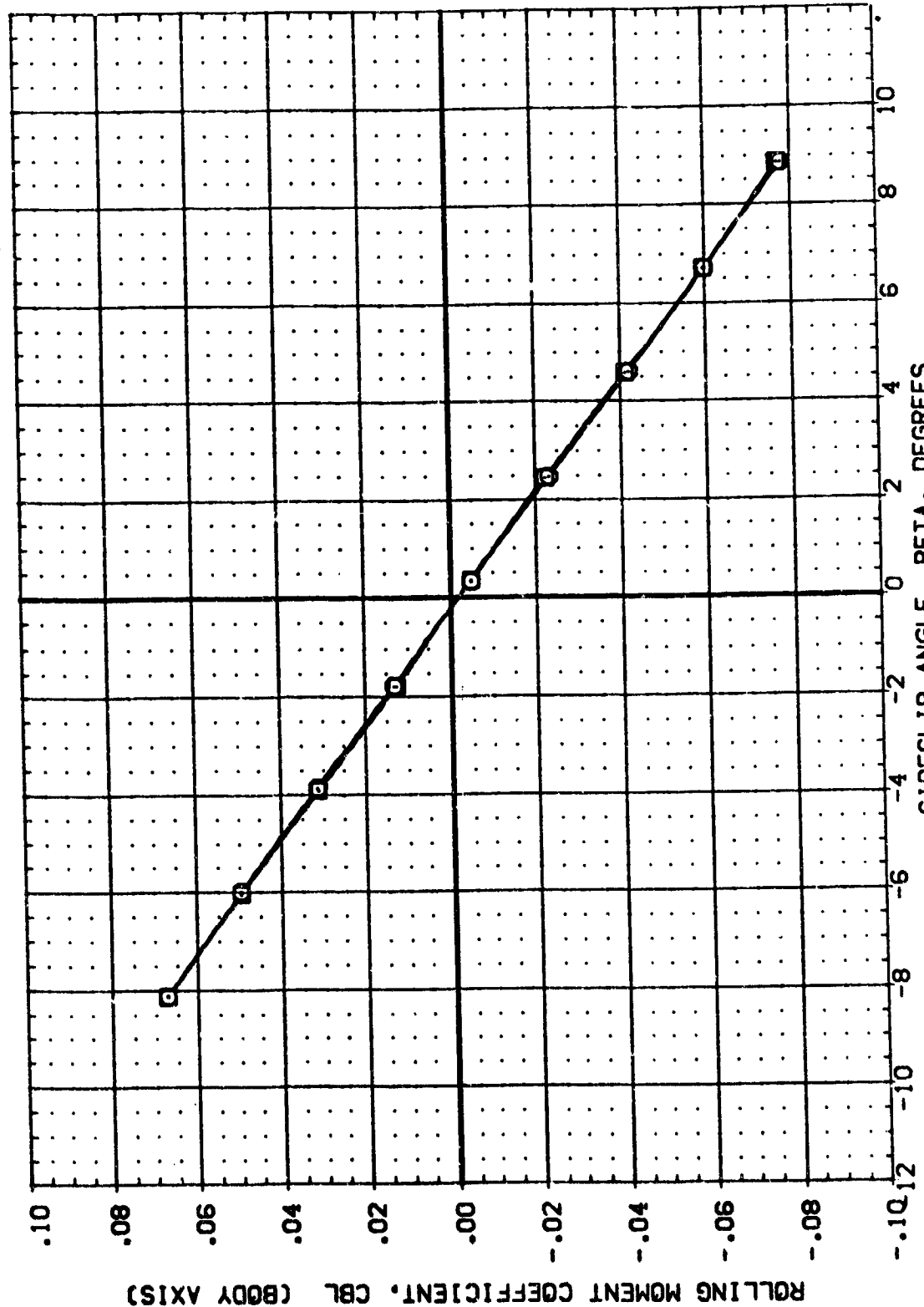
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(C)MACH = 1.10



DATA SET SYMB. CONFIGURATION DESCRIPTION ALPHA ORBINC
(888006) HSC 360(1A18) (034)(TS)(S12) .000 .000
(888007) HSC 360(1A18) (034)(TS)(S12) (ATTACH POST OFF) .000 .000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

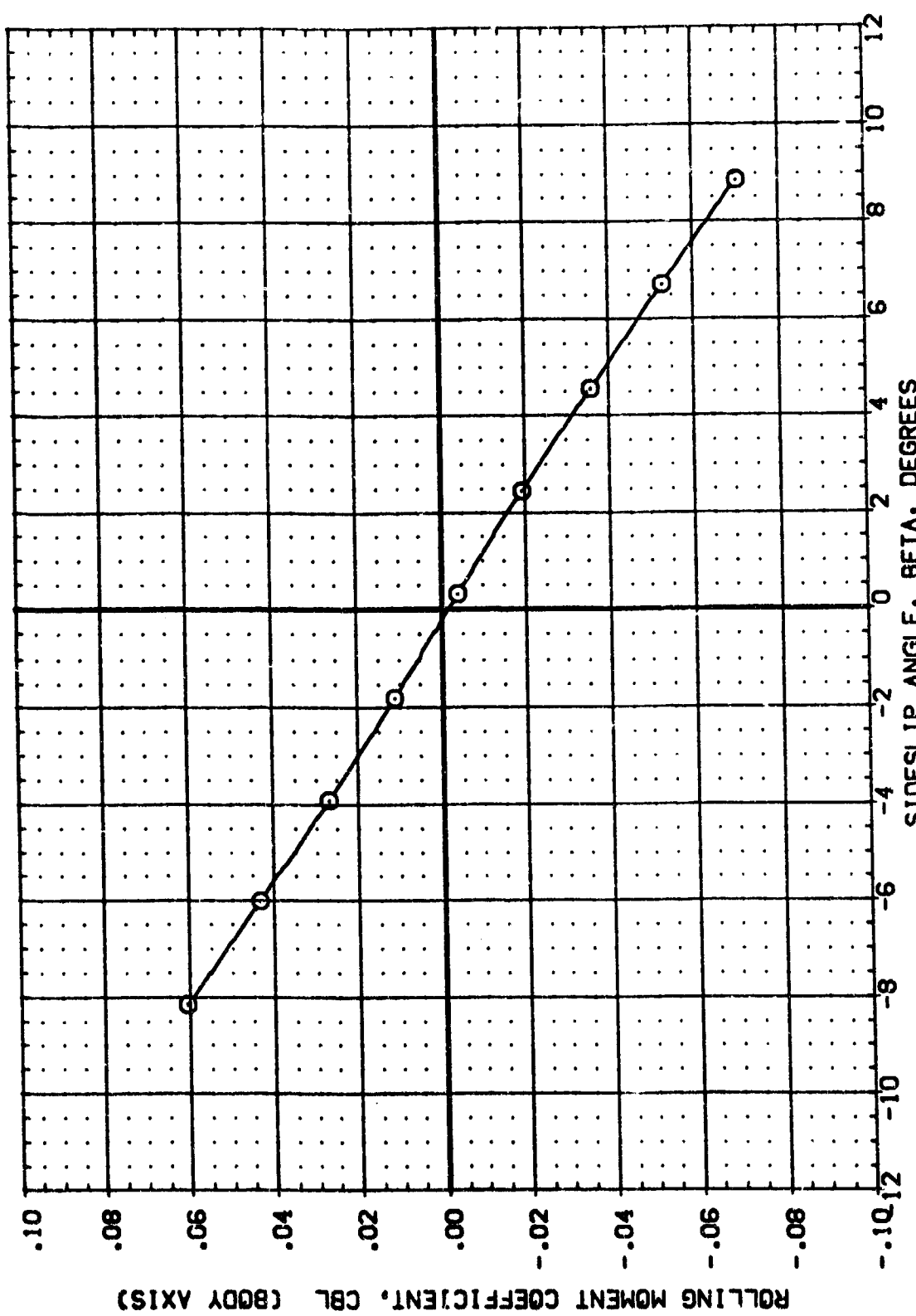
(O)MACH = 1.25

DATA SET SYMBOL: (B85006) ☐ (B85007)

CONFIGURATION DESCRIPTION: MSC 560(1A48) (034)(T9)(S12)
DATA NOT AVAILABLE

ALPHA: .000
ORBIT: .000

REFERENCE INFORMATION:
SREF: 6.1980 SQ. IN.
LREF: 5.1600 IN.
BREF: 5.1600 IN.
XMRP: 2.7200 IN.
YMRP: .0000 IN.
ZMRP: .0000 IN.
SCALE: .0040



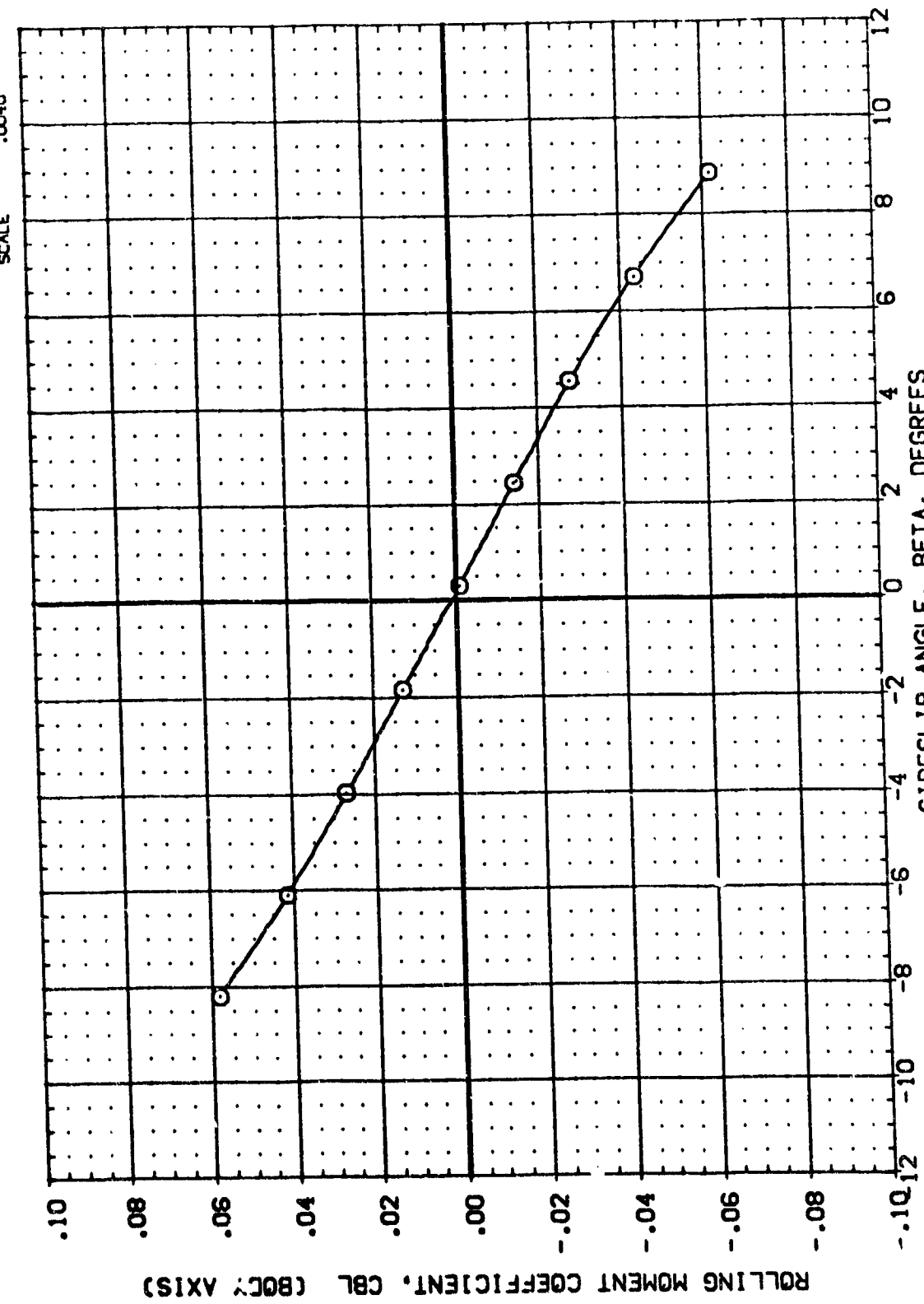
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(C)MACH = 1.46

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885006) MSFC 580(1A48) (034)(T9)(S12)
 (885007) DATA NOT AVAILABLE

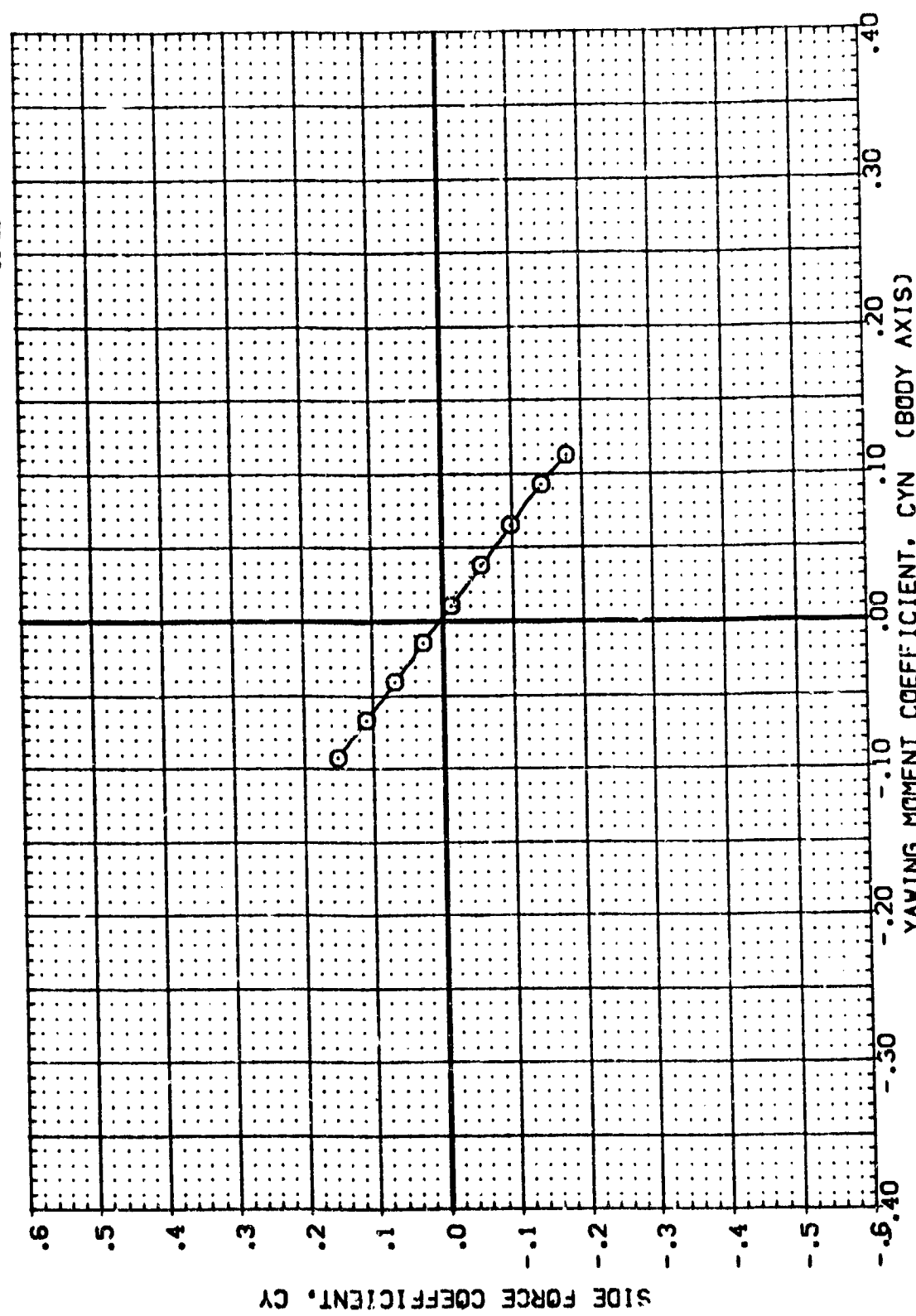


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (889006) ☐ MSFC 580(1A48) (034)(T9)(S12)
 (889007) ☐ DATA NOT AVAILABLE

ALPHA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



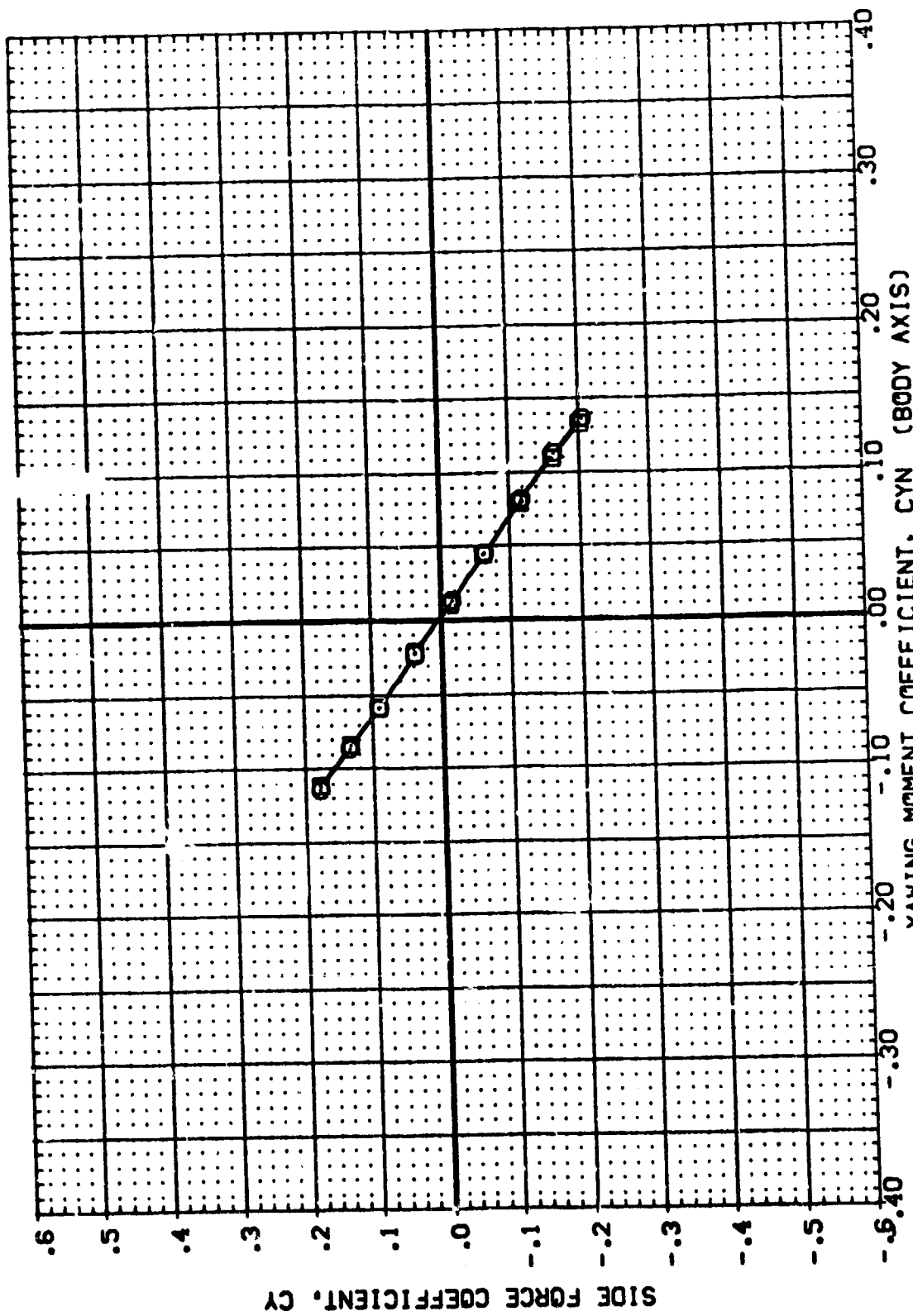
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER



REFERENCE INFORMATION
SREF 6.1980 SQ.IN.
LREF 5.1500 IN.
BREF 5.1500 IN.
XREF 2.7200 IN.
YREF .0000 IN.
ZREF .0000 IN.
SCALE .0040

ALPHA ORBINC
.000
.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(B85006) B M57C 580(1A48) (034)(T9)(S12) (ATTACH POST OFF)
(B85007) M57C 580(1A48) (034)(T9)(S12)



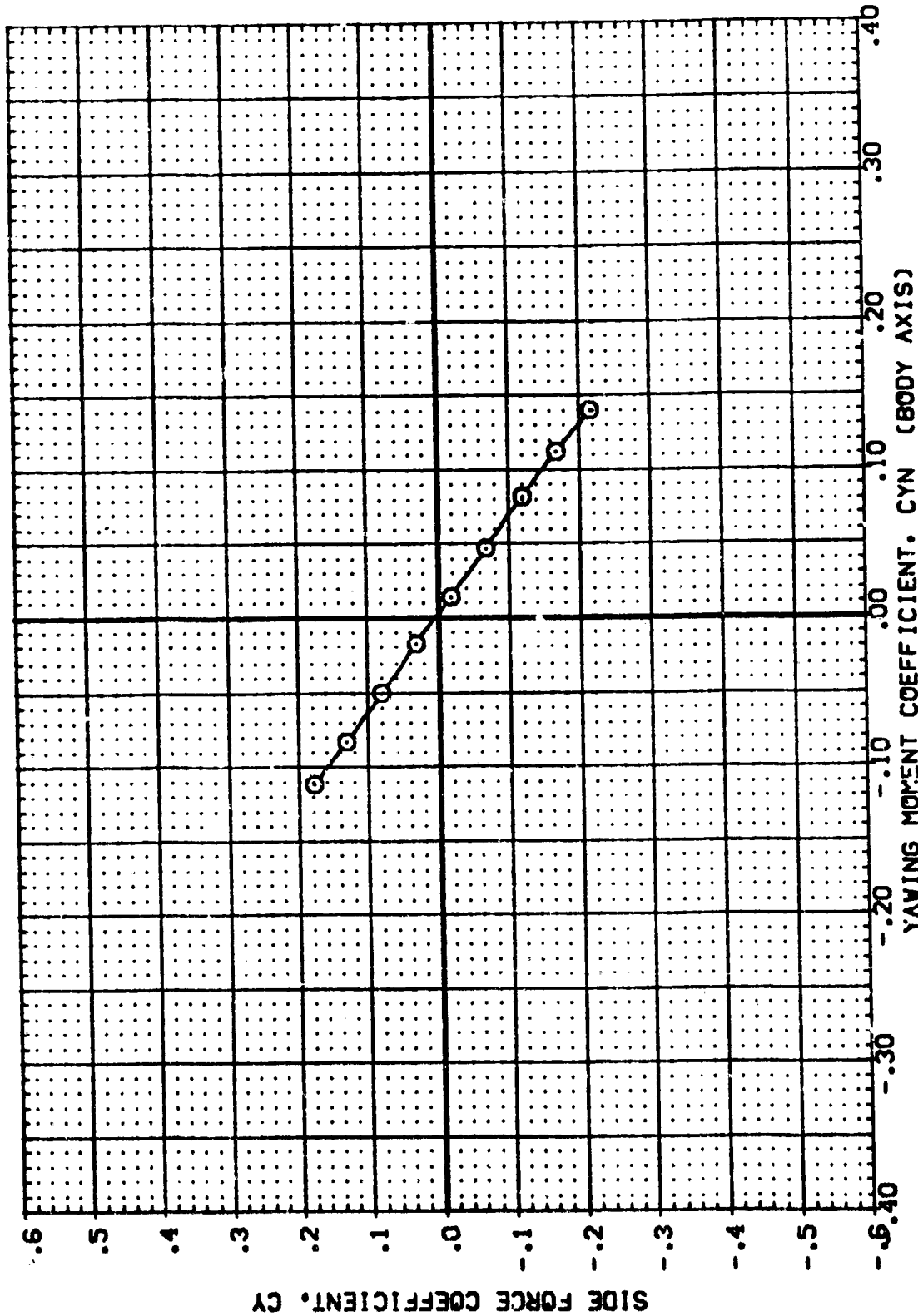
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(B)MACH = .90

DATA SET SYMBOL: [B88006] [B88007]
 CONFIGURATION DESCRIPTION: NSFC 580(1A48) (034)(TS)(S12)
 DATA NOT AVAILABLE

ALPHA: .000
 ORBITING: .000

REFERENCE INFORMATION:
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0010



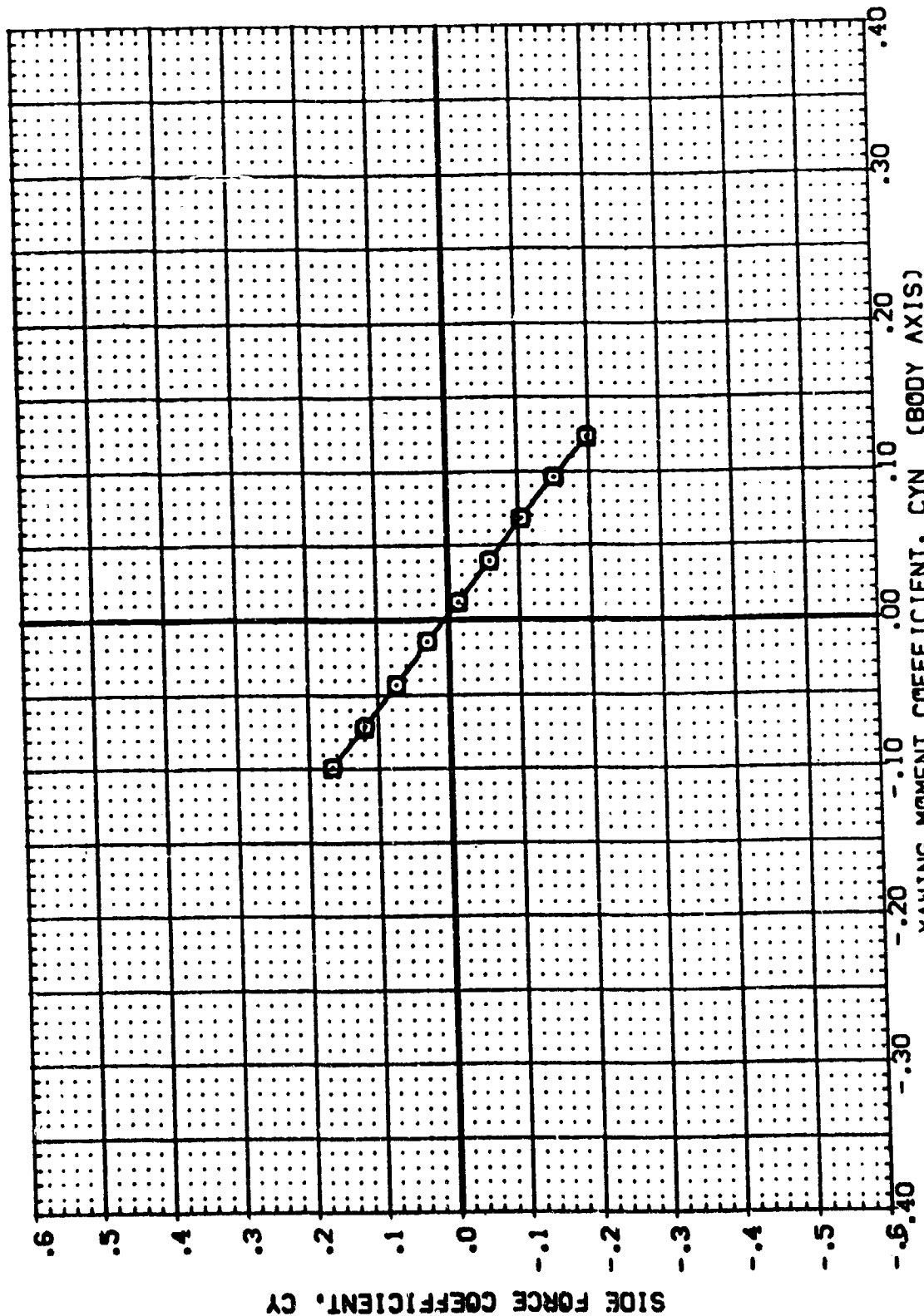
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(C)MACH = 1.10

REFERENCE INFORMATION
 SREF 6.1800 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

ALPHA 0.000
 CINC 0.000

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (885005) MSFC 580(1448) (034)(19)(S12)
 (885007) MSFC 580(1448) (034)(19)(S12) (ATTACH POST OFF)



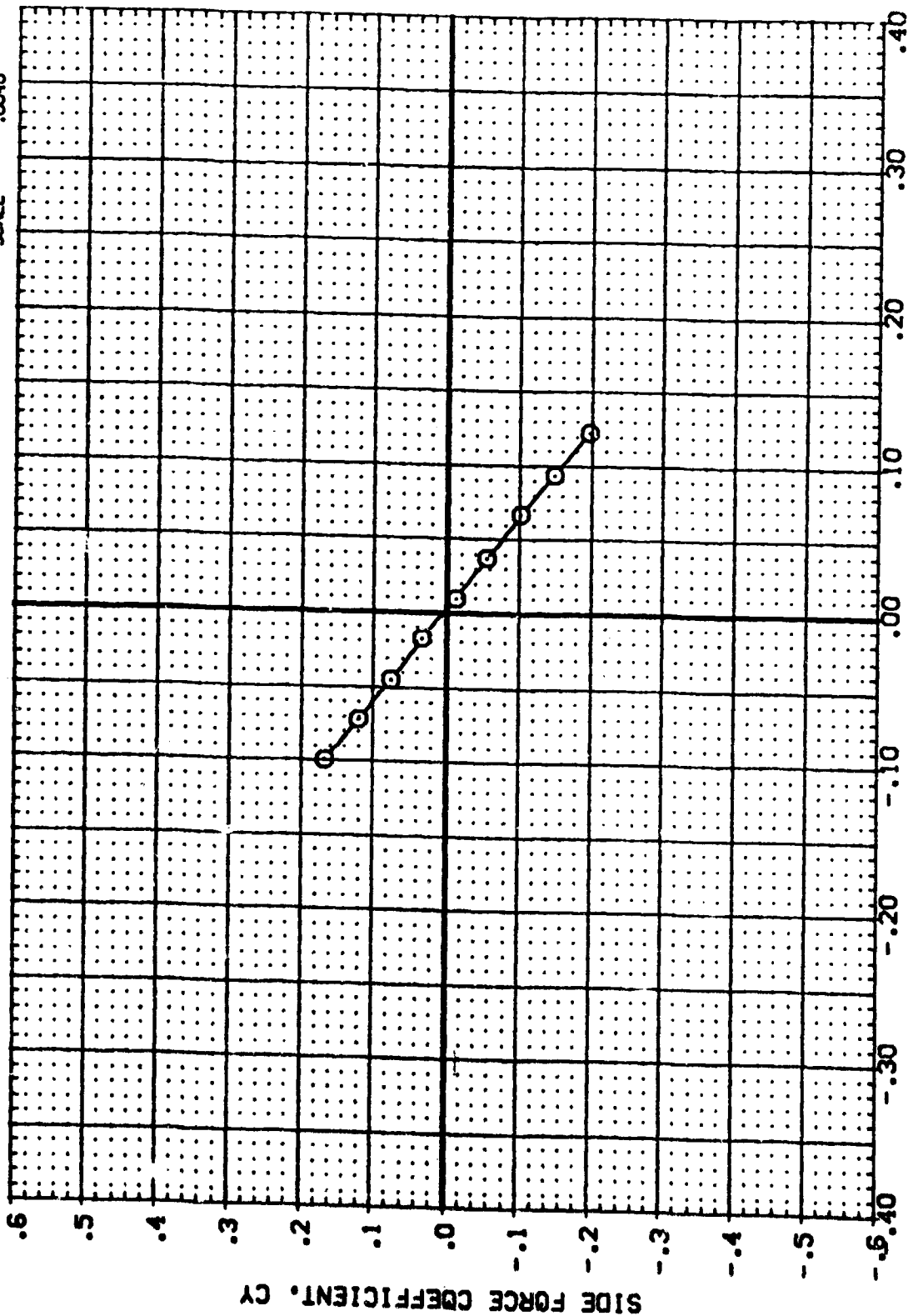
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(D)MACH = 1.25

DATA SET SYMBOL: (585006) (585007)
 CONFIGURATION DESCRIPTION: NSFC 580(1A48) (034)(19)(S12)
 DATA NOT AVAILABLE

ALPHA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

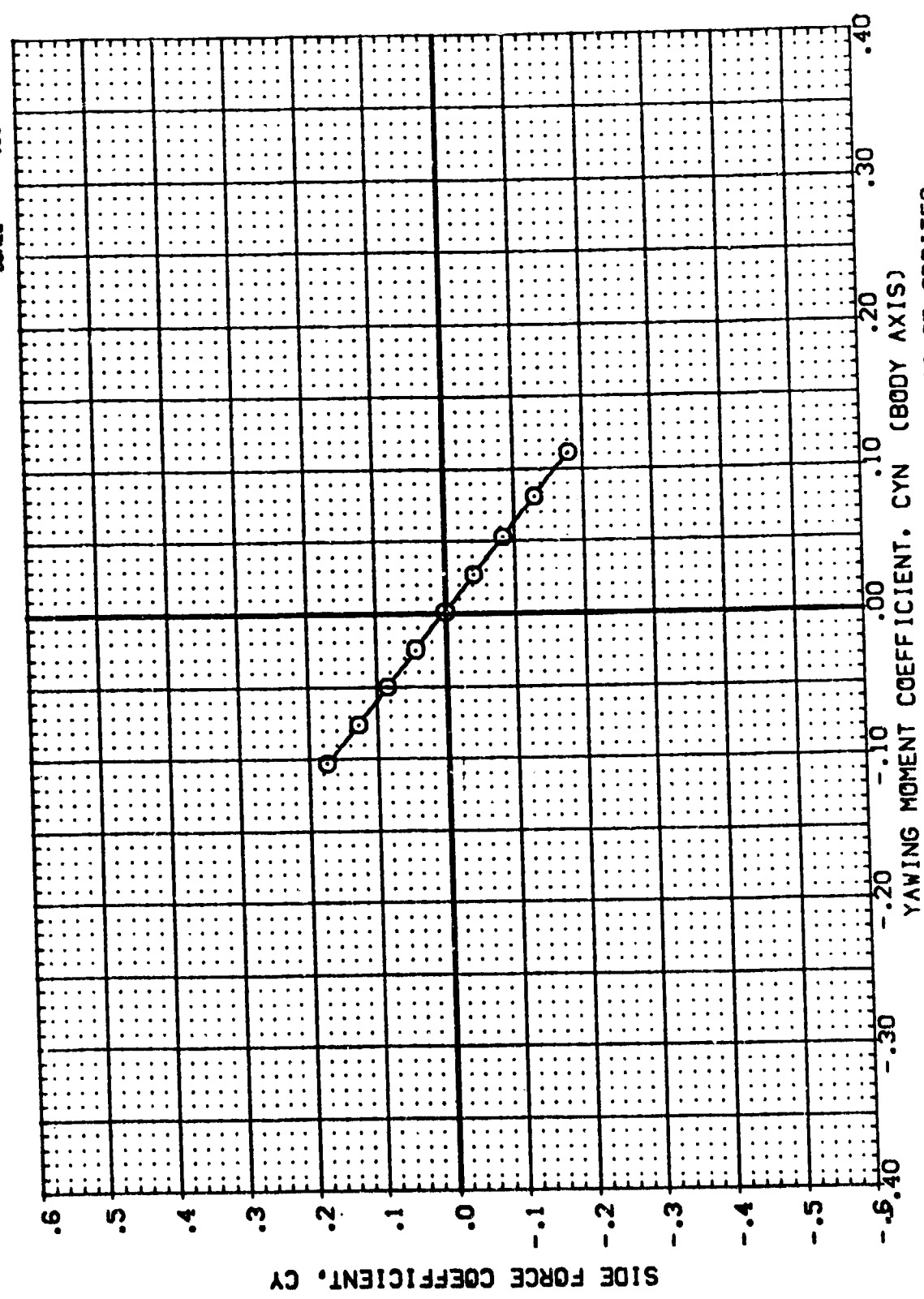
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(E)MACH = 1.46


REFERENCE INFORMATION:
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0010

ALPHA 0.000
 ORBING .000

DATA SET SYMBOL (885005) ☐ CONFIGURATION DESCRIPTION
 MSFC 580(1A48) (034)(T9)(S12)
 DATA NOT AVAILABLE

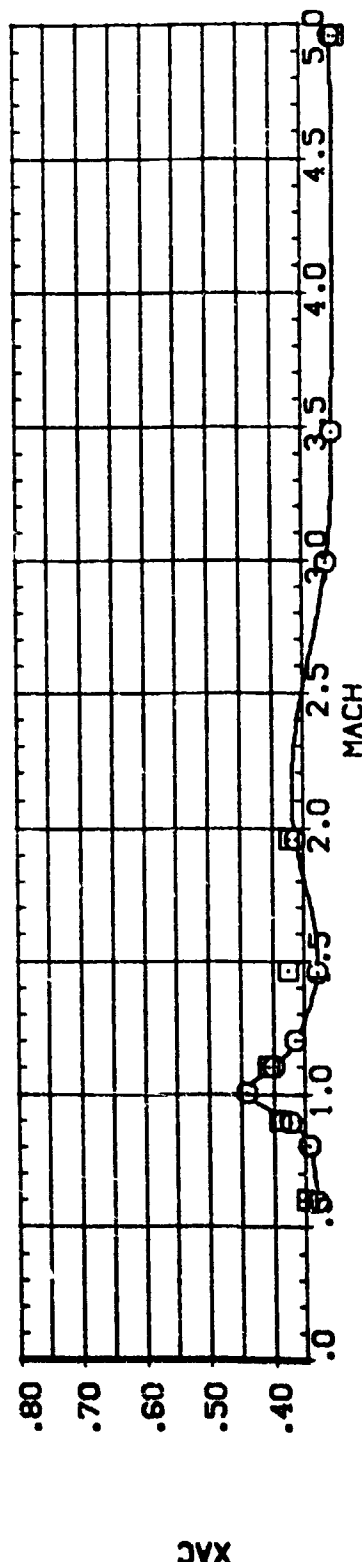
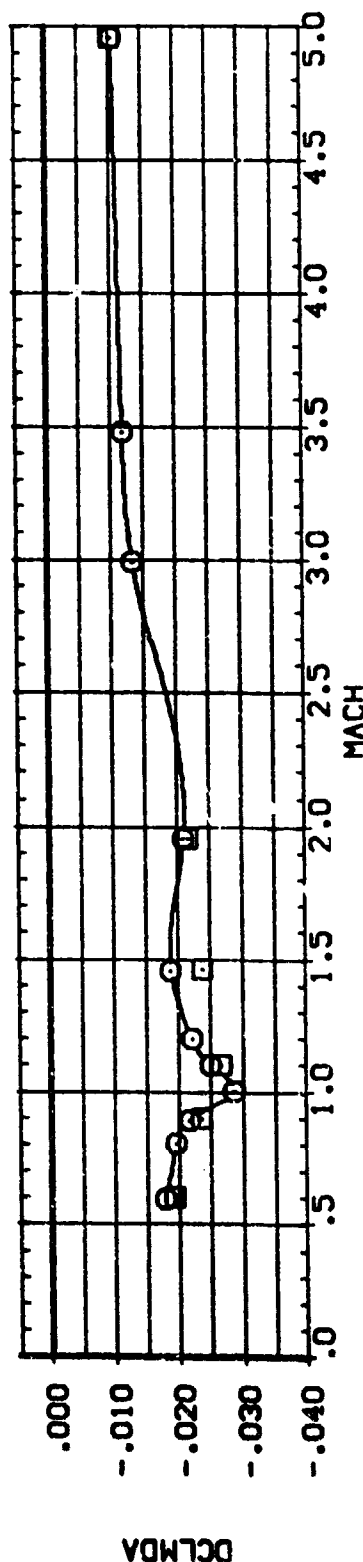
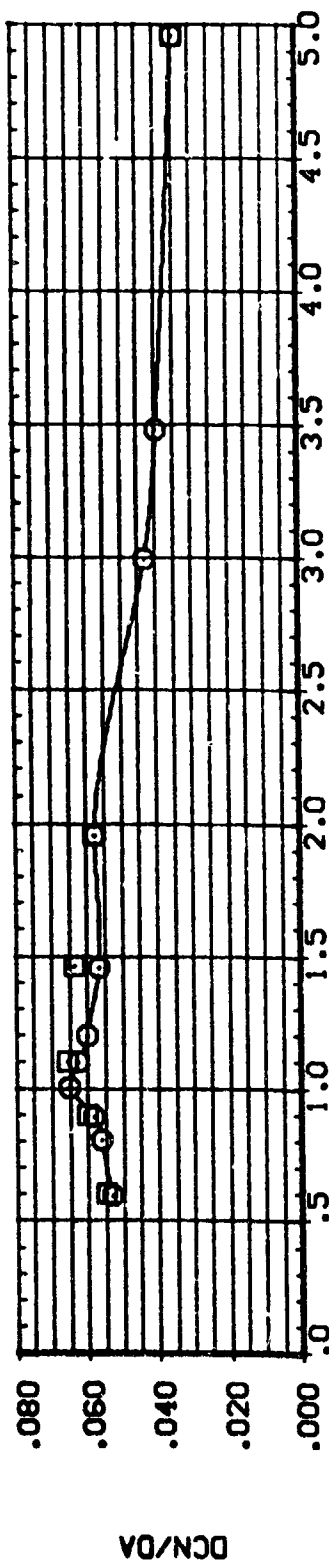


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

DATA SET SYMBOL (888009) (888007)  CONFIGURATION DESCRIPTION (034)(114)(S12)(U6) (034)(119)(S12)

BETA 0.000 0.000 0.000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0040



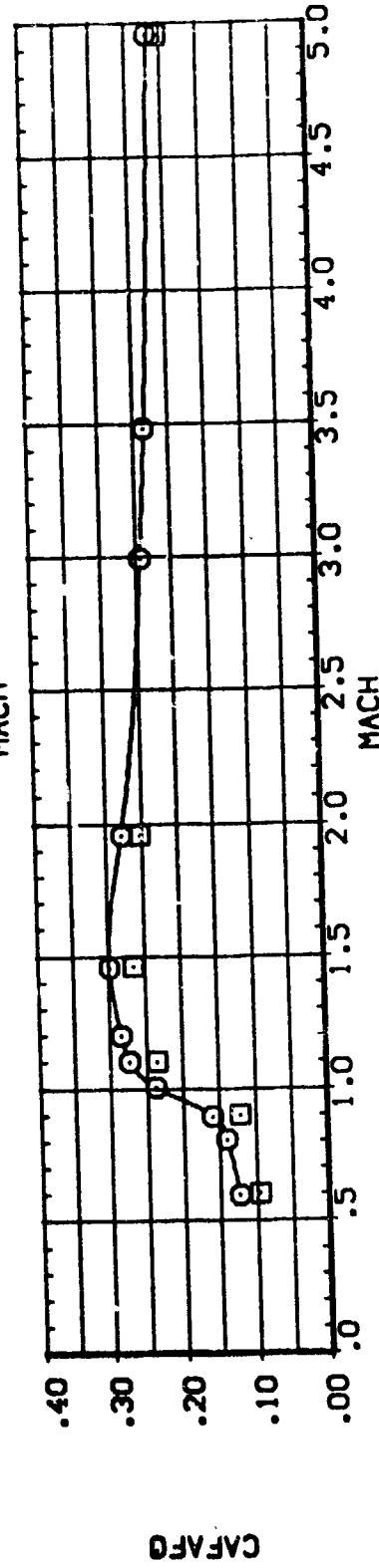
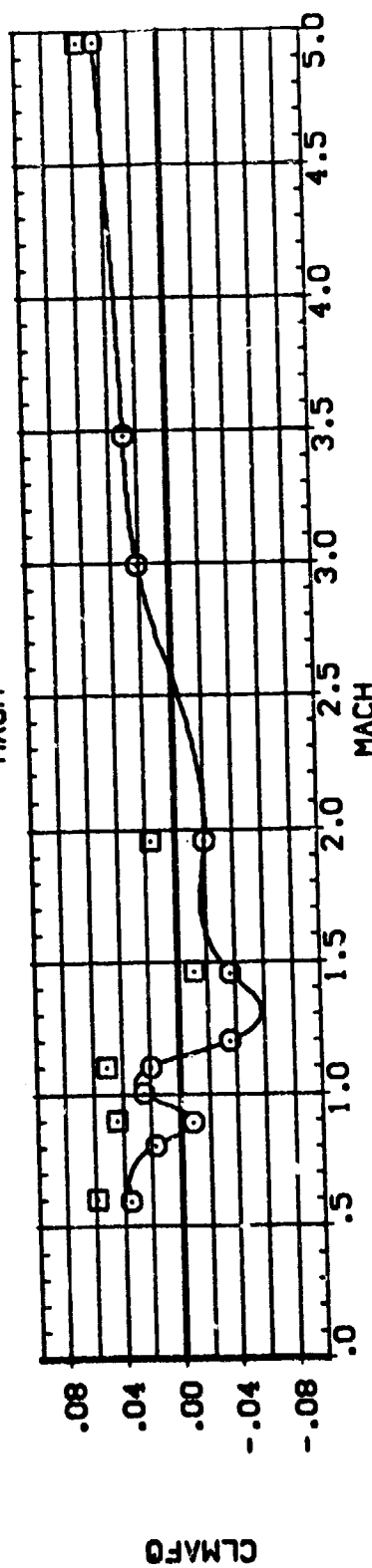
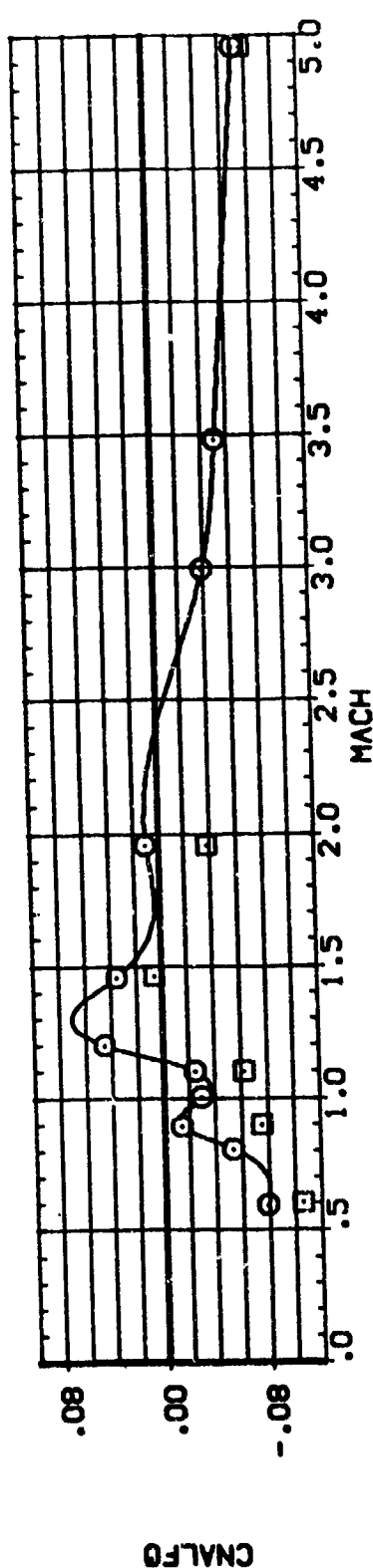
EFFECT OF MACH NO. ON LONG. CHARACT. (FIRST STAGE) WITH AND W/O ATTACH-PROTUB.



DATA SET SYMBOL { 888008 }
 { 888007 }
 CONFIGURATION DESCRIPTION
 MSC 579(1A37) (034)(114)(S12)(U6)
 MSC 579(1A37) (034)(119)(S12)

BETA .000
 ORBING .000

REFERENCE INFORMATION
 SREF 6.1580 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

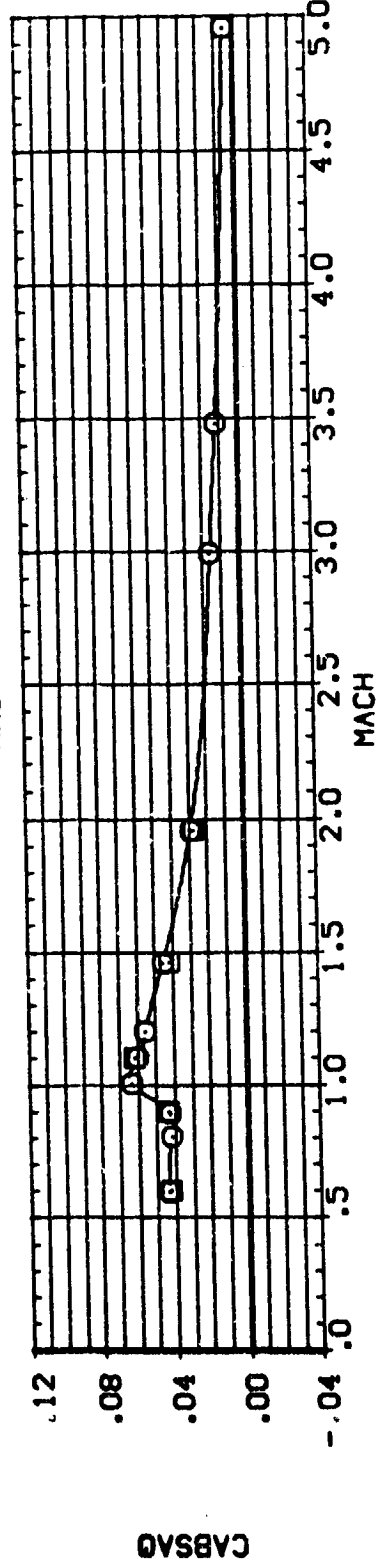
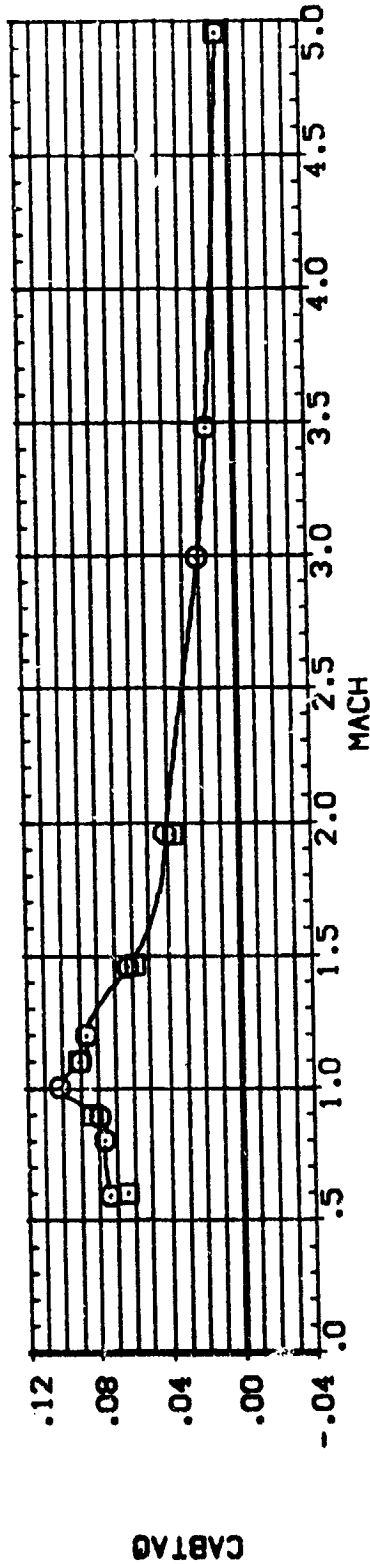
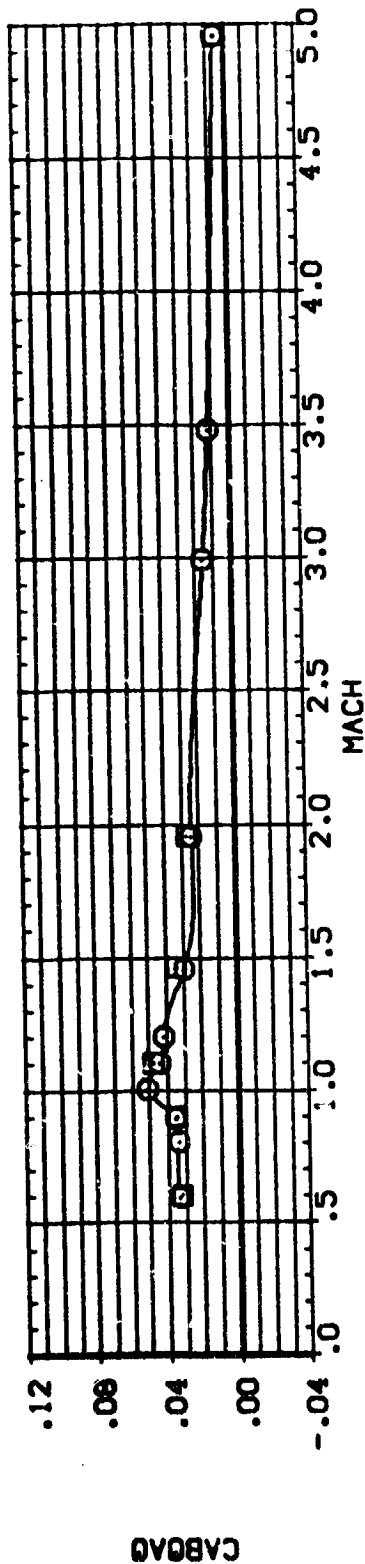


EFFECT OF MACH NO. ON LONG. CHARACT.(FIRST STAGE) WITH AND W/O ATTACH-PROTUB.

DATA SET SYMBOL: (888009)
 (888007)
 CONFIGURATION DESCRIPTION:
 MSFC 579(1A37) (034)(114)(512)(US)
 MSFC 579(1A37) (034)(19)(512)

BETA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 6.1980 SO.IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XREF: 2.7200 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0040

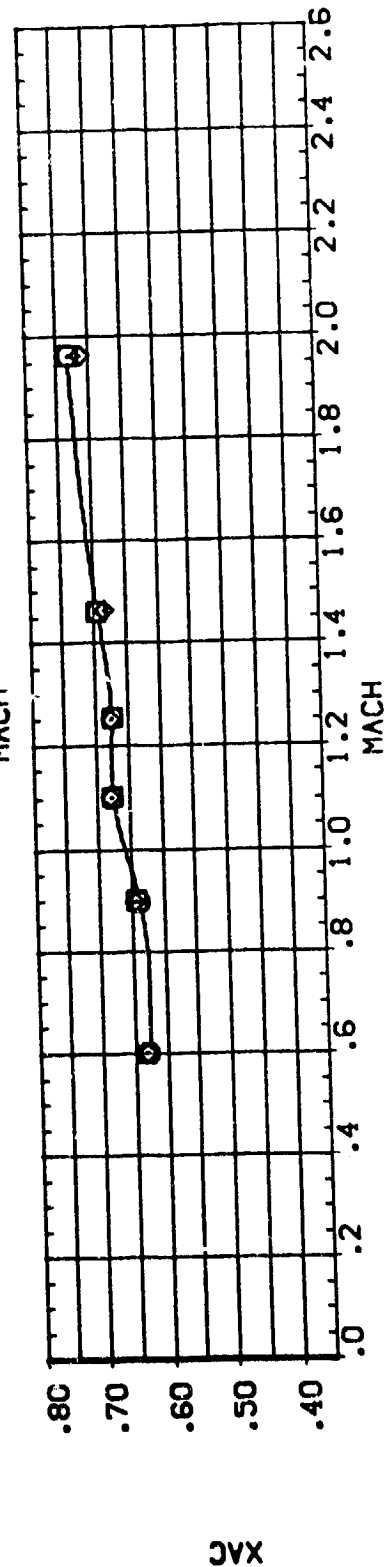
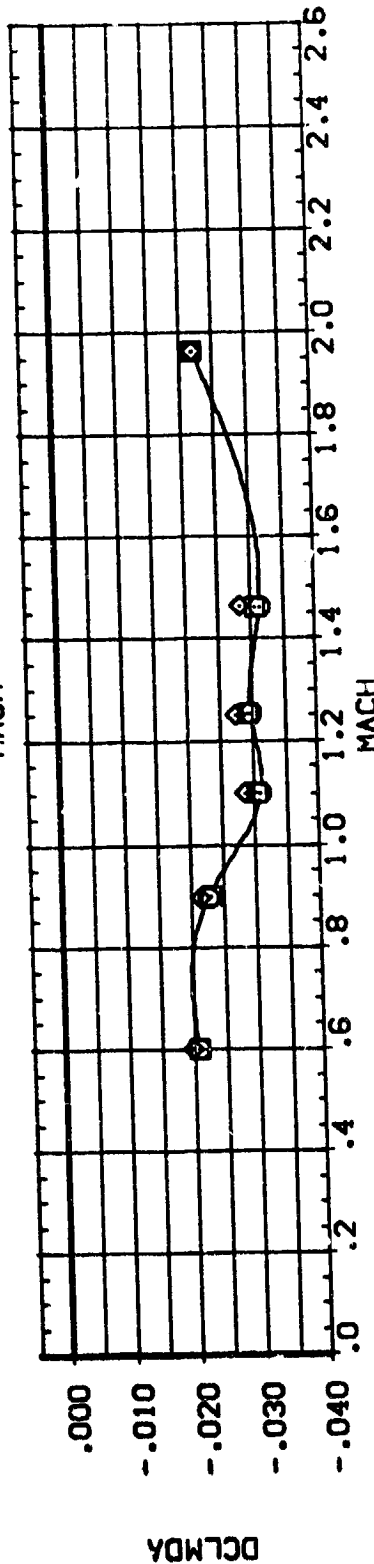
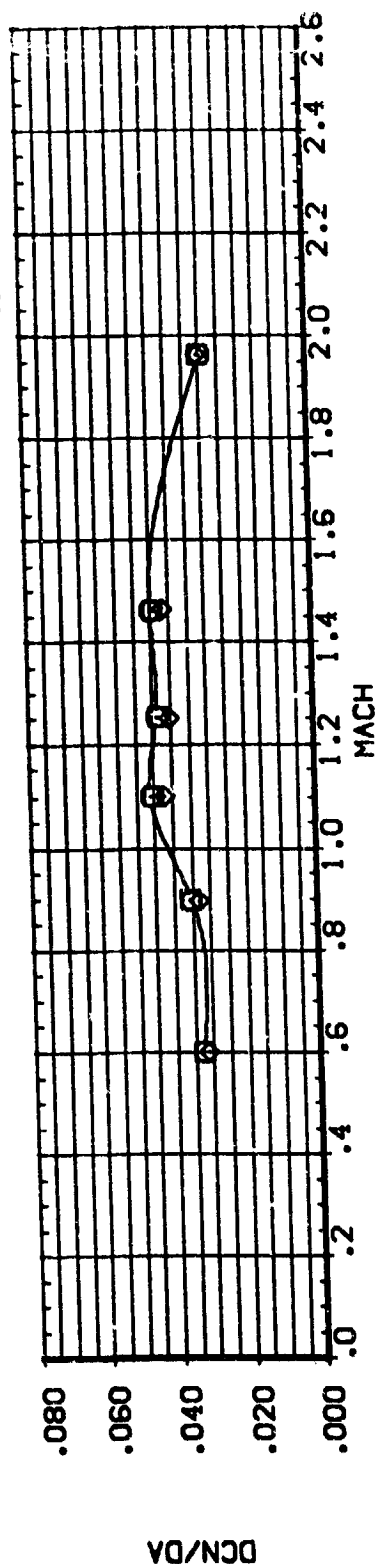


EFFECT OF MACH NO. ON LONG. CHARACT.(FIRST STAGE) WITH AND W/O ATTACH-PROTUB.

REFERENCE INFORMATION
 SREF 6.1900 SQ.IN.
 LREF 5.1600 IN.
 BRFP 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

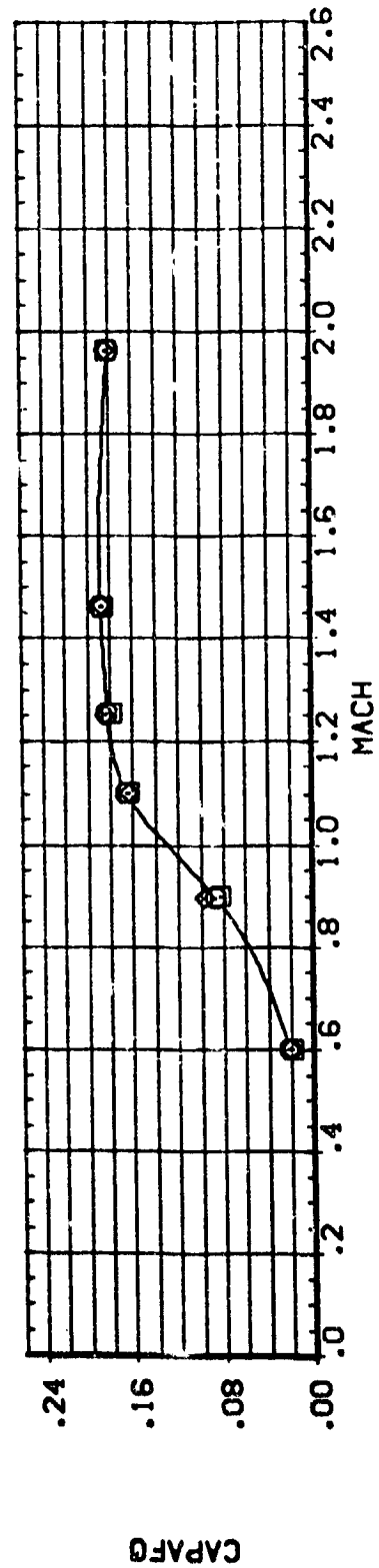
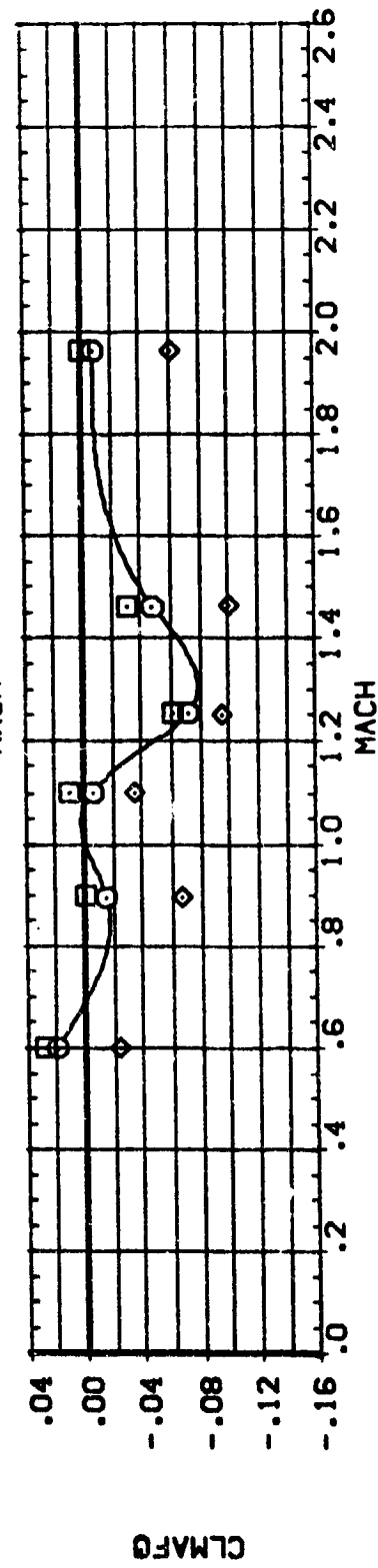
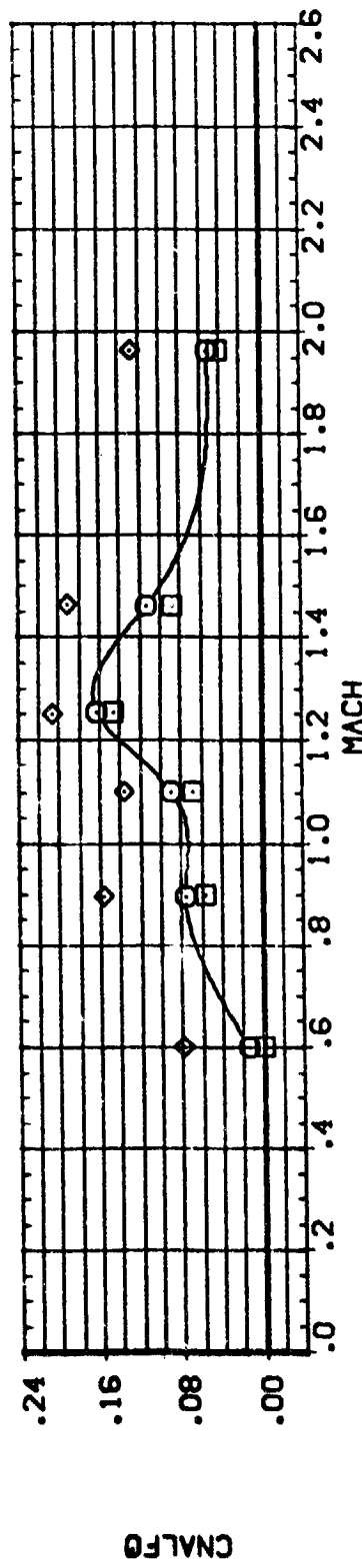
BETA ORBING
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88005) MSFC 580(1A48) (034)(T9)(S12)
 (B88004) MSFC 580(1A48) (034)(T14)(S12)
 (B88001) MSFC 580(1A48) (034)(T14)(S12)(U6)



EFFECT OF MACH NO. ON LONG. CHARACT.(ORBITER ONLY) WITH AND W/O ATTACH-PROTUB.

DATA SET SYMBOL: (885005) (885004) (885001)
 CONFIGURATION DESCRIPTION: MSFC 580(I48) (034)(T9)(S12) MSFC 580(I48) (034)(T14)(S12) MSFC 580(I48) (034)(T14)(S12)(U6)
 BETA: .000 .000 .000
 ORBITING: .000 .000 .000
 REFERENCE INFORMATION: SREF 6.198C 50. IN. LREF 5.160C IN. BREF 5.160C IN. XMRP 2.720C IN. YMRP .000C IN. ZMRP .000C IN. SCALE .0010

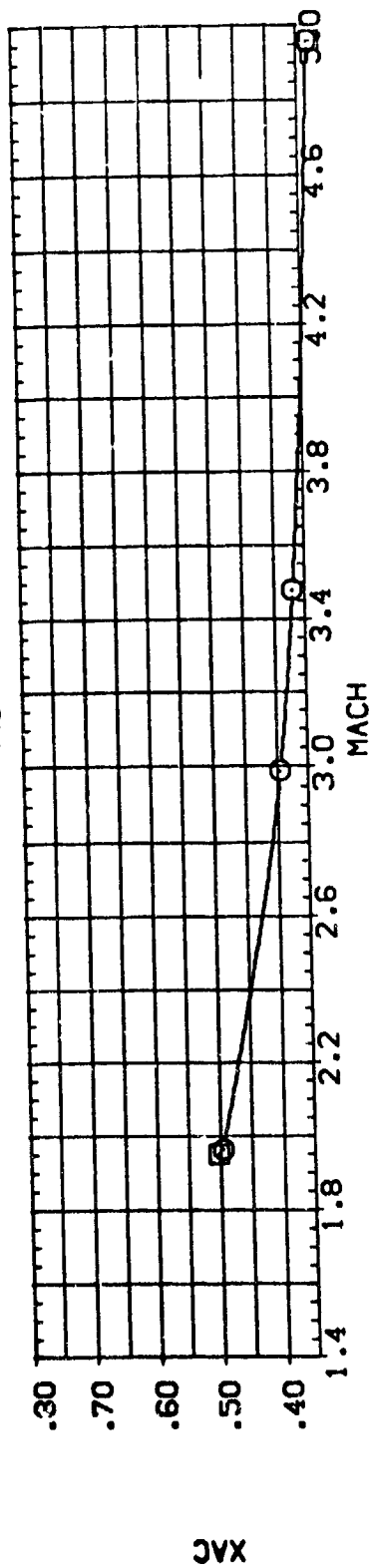
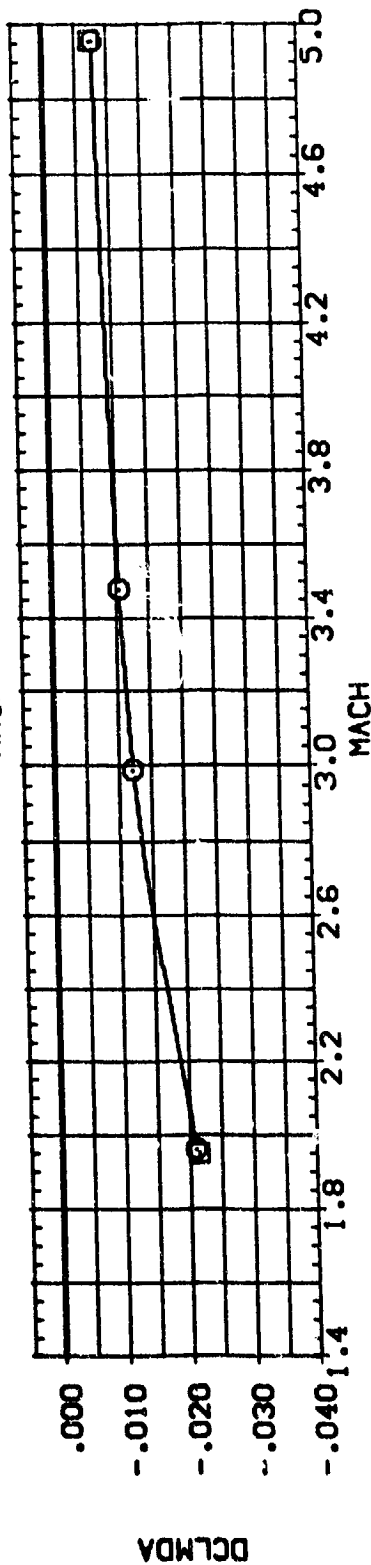
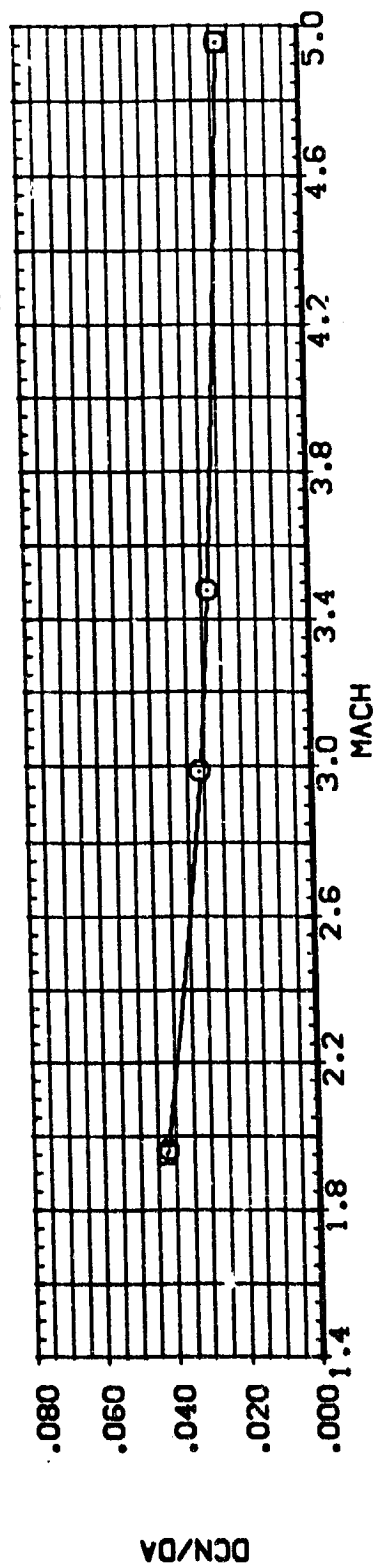


EFFECT OF MACH NO. ON LONG. CHARACT.(ORBITER ONLY) WITH AND W/O ATTACH-PROTUB.

DATA SET SYMBOL (888003) (888001)  CONFIGURATION DESCRIPTION MSFC 579(1A37) (034)(114)(U7) MSFC 579(1A37) (034)(119)

BETA .000 .000 .000 ORBINC .000 .000 .000

REFERENCE INFORMATION
SREF 5.1980 SO.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040

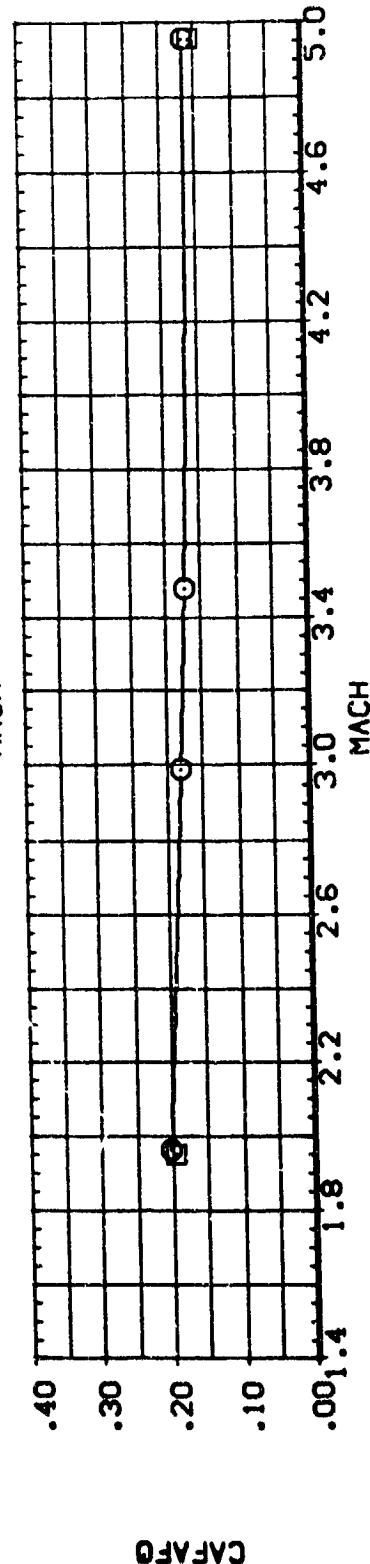
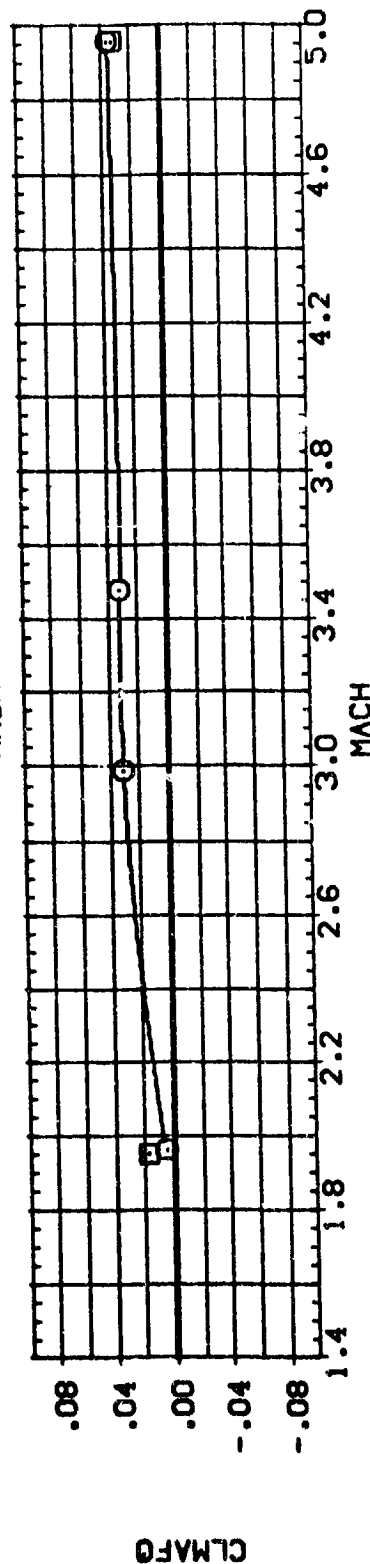
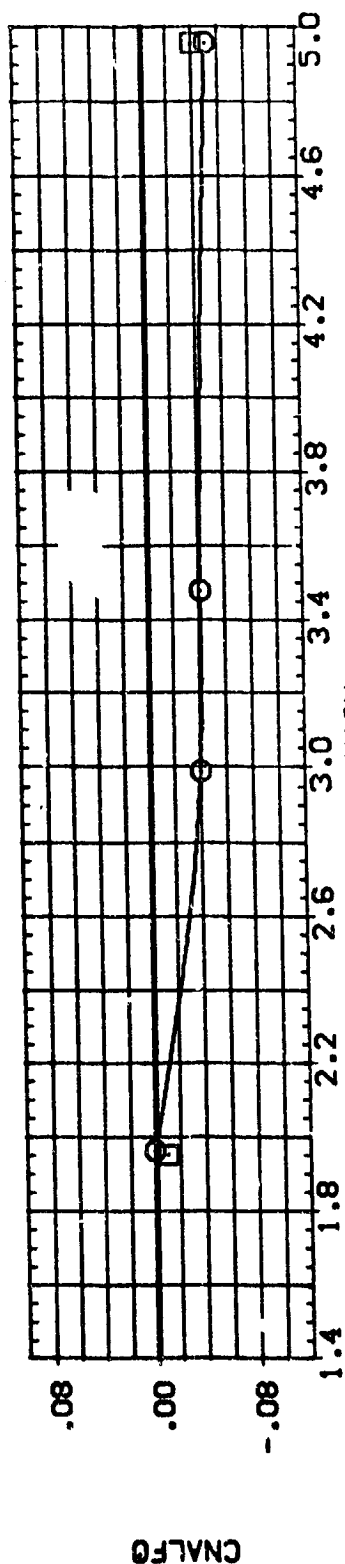


EFFECT OF MACH NO. ON LONG. CHARACT.(SECOND STAGE)WITH AND W/O ATTACH-PROTUB.

DATA SET SYMBOL (866003) E
 CONFIGURATION DESCRIPTION
 HSC 579(1A37) (034)(14)(U7)
 HSC 579(1A37) (034)(19)

BETA .000
 ORBINC .000

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

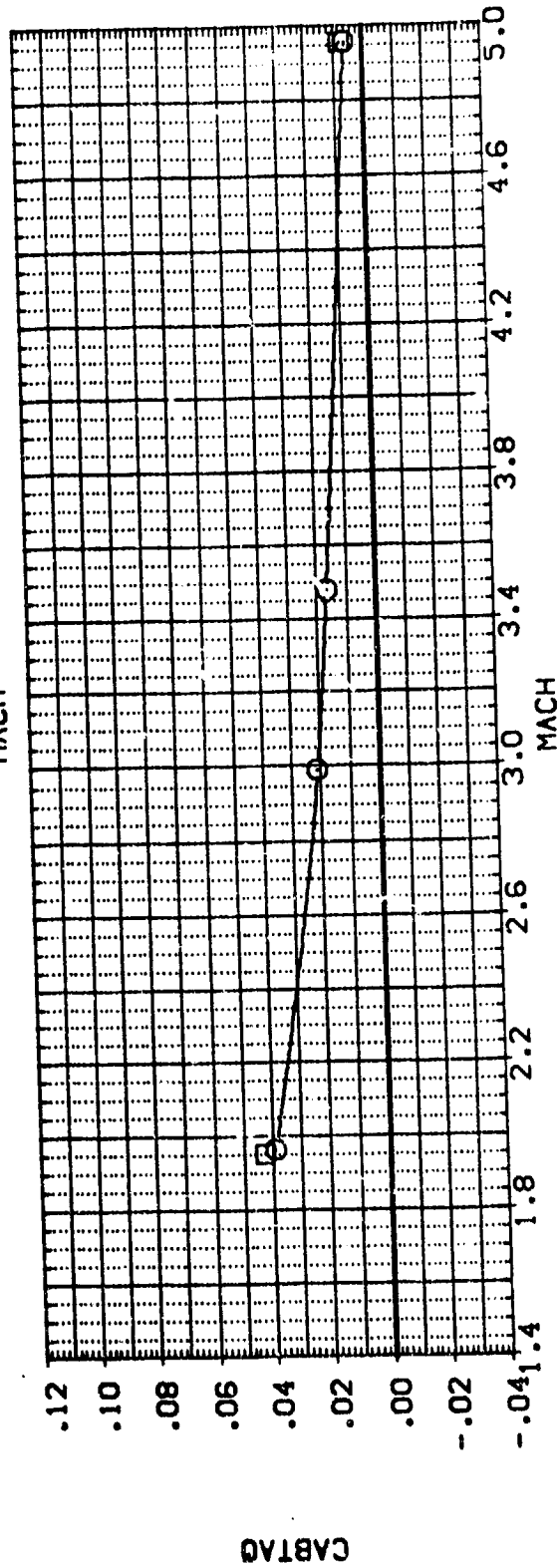
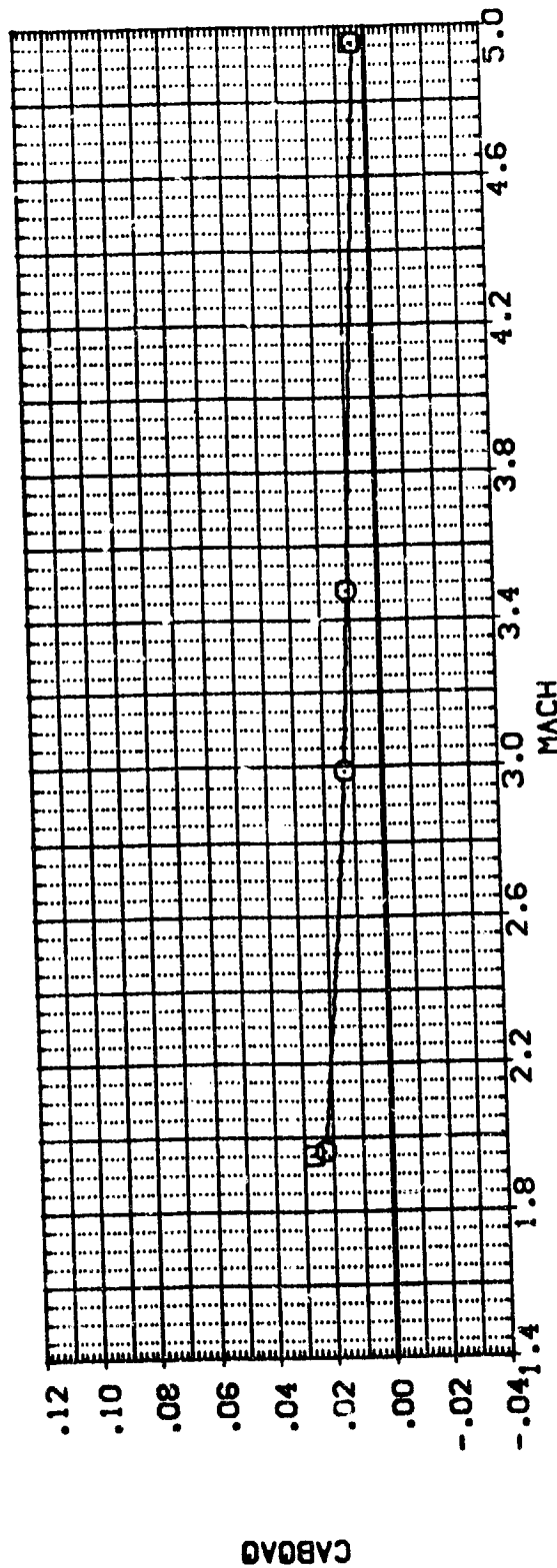


EFFECT OF MACH NO. ON LONG. CHARACT.(SECOND STAGE)WITH AND W/O ATTACH-PROTUB.

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YPRP 2.7200 IN.
 ZPRP .0000 IN.
 SCALE .0040

BETA .000
 .000
 .000

DATA SET SYMBOL (888003) (888001)
 CONFIGURATION DESCRIPTION
 MSFC 579(1A37) (034)(114)(17)
 MSFC 579(1A37) (034)(17)



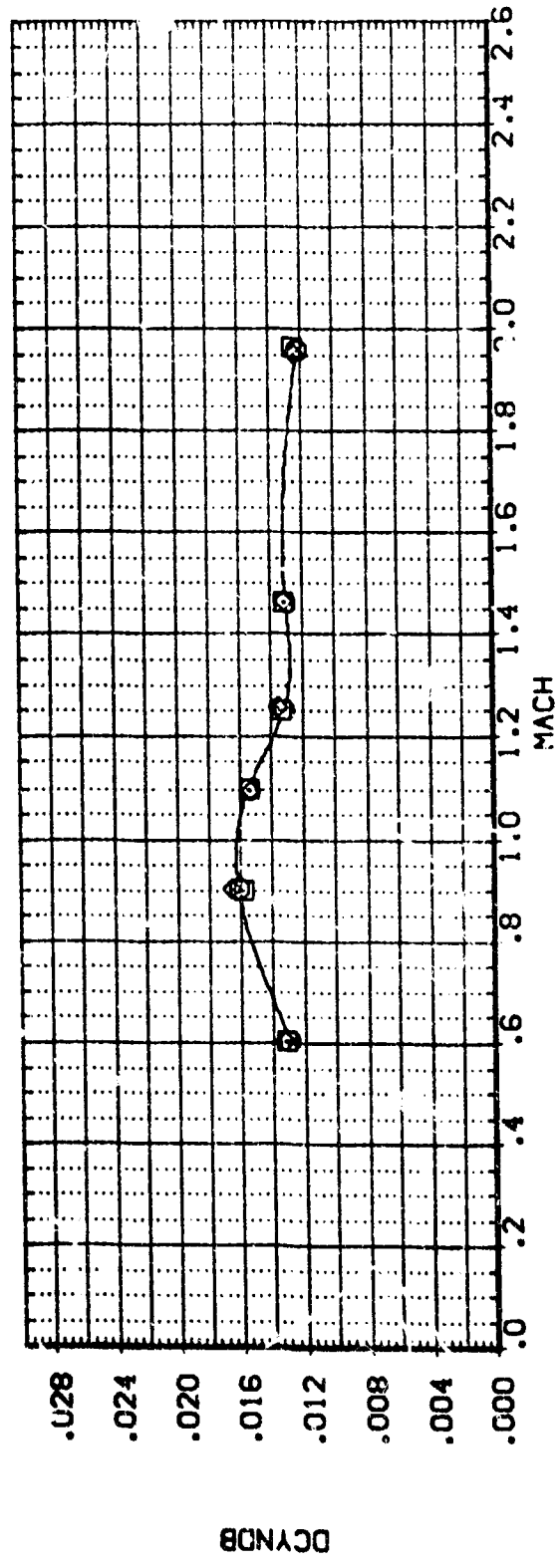
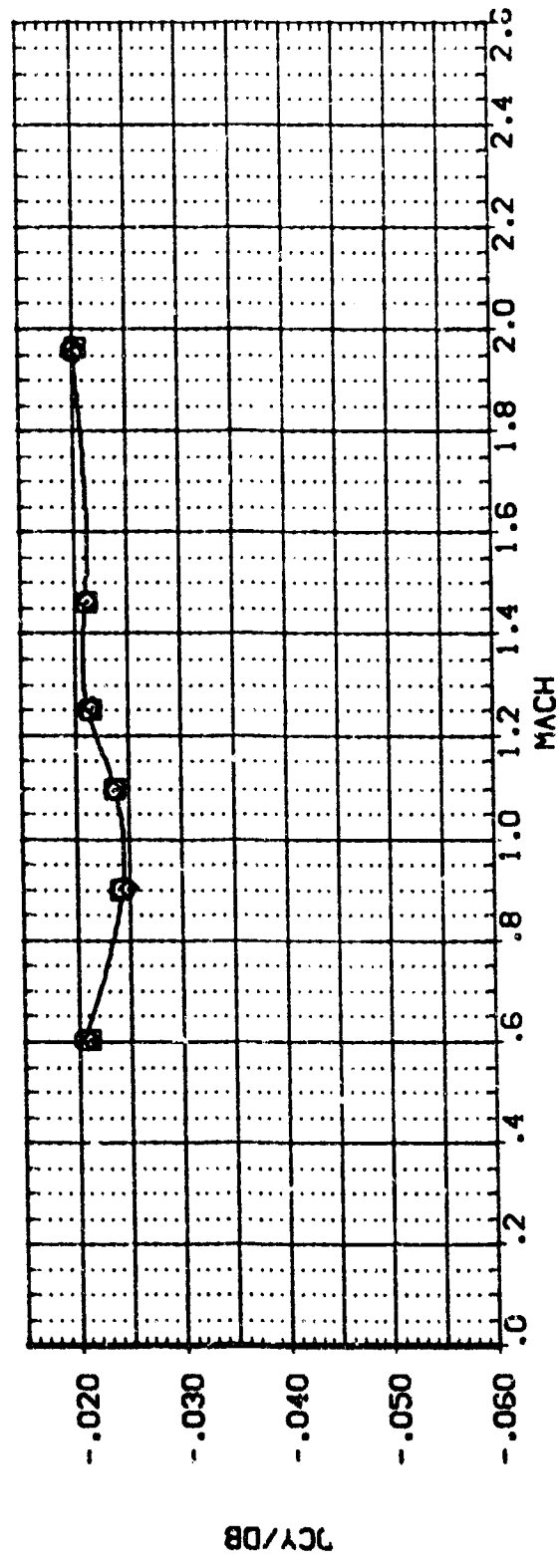
EFFECT OF MACH NO. ON LONG. CHARACT. (SECOND STAGE) WITH AND W/O ATTACH-PROTUB.

DATA SET SYMBOL
 (885005)
 (885003)
 (885002)

CONFIGURATION DESCRIPTION
 HSC 560(1A48) (034)(T9)(S12)
 HSC 560(1A48) (034)(T14)(S12)
 HSC 560(1A48) (034)(T14)(S12)(U6)

ALPHA ORBINC
 .000
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

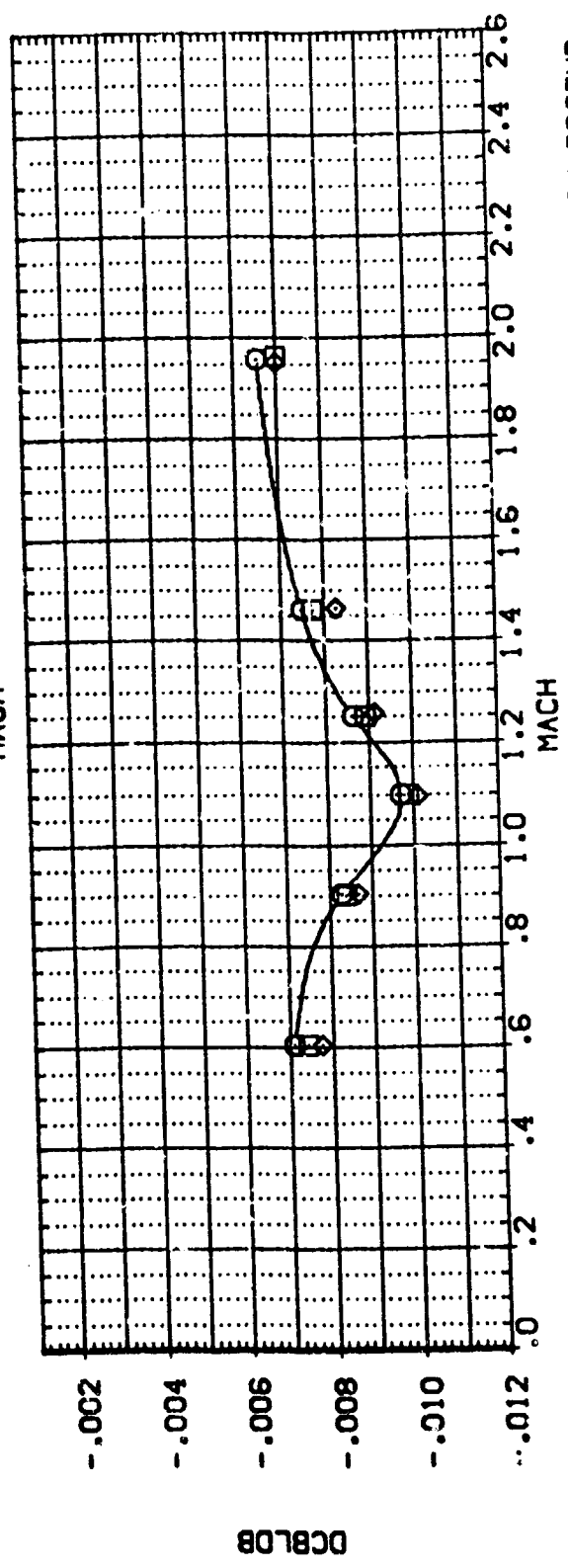
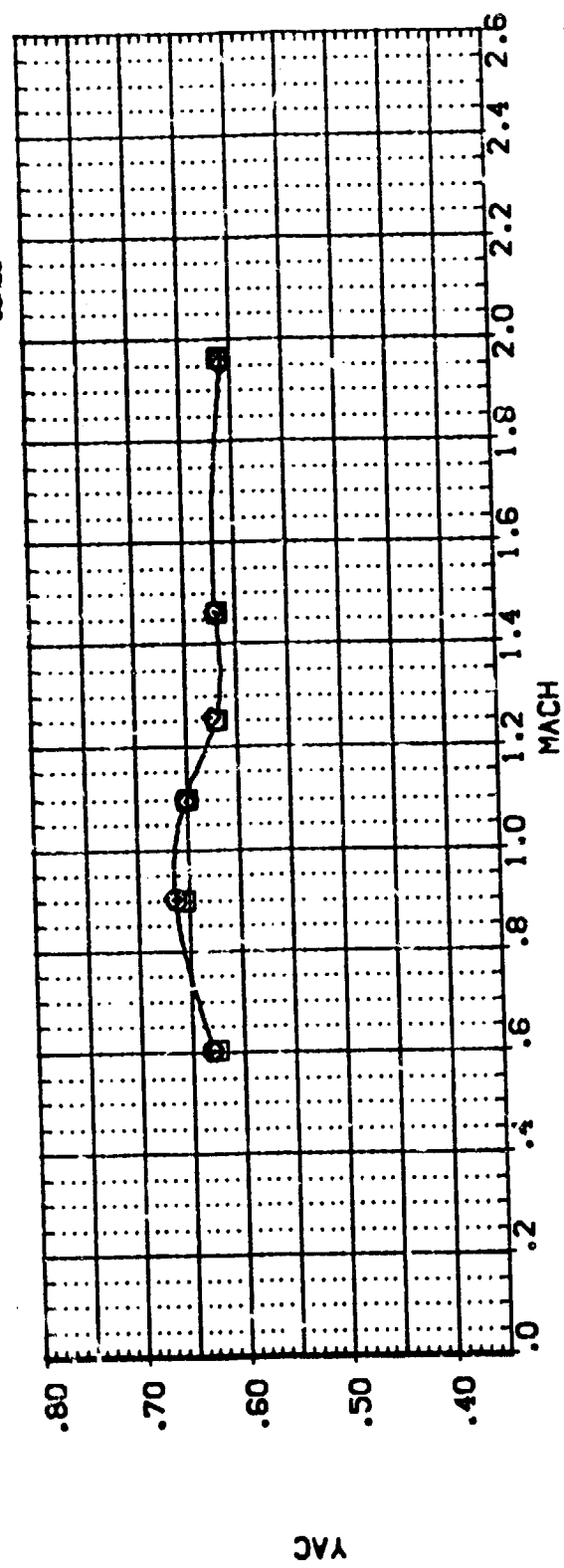


EFFECT OF MACH NO. ON DIRECT. CHARACT. (ORBITER ONLY) WITH AND W/O ATTACH-PROTUB.

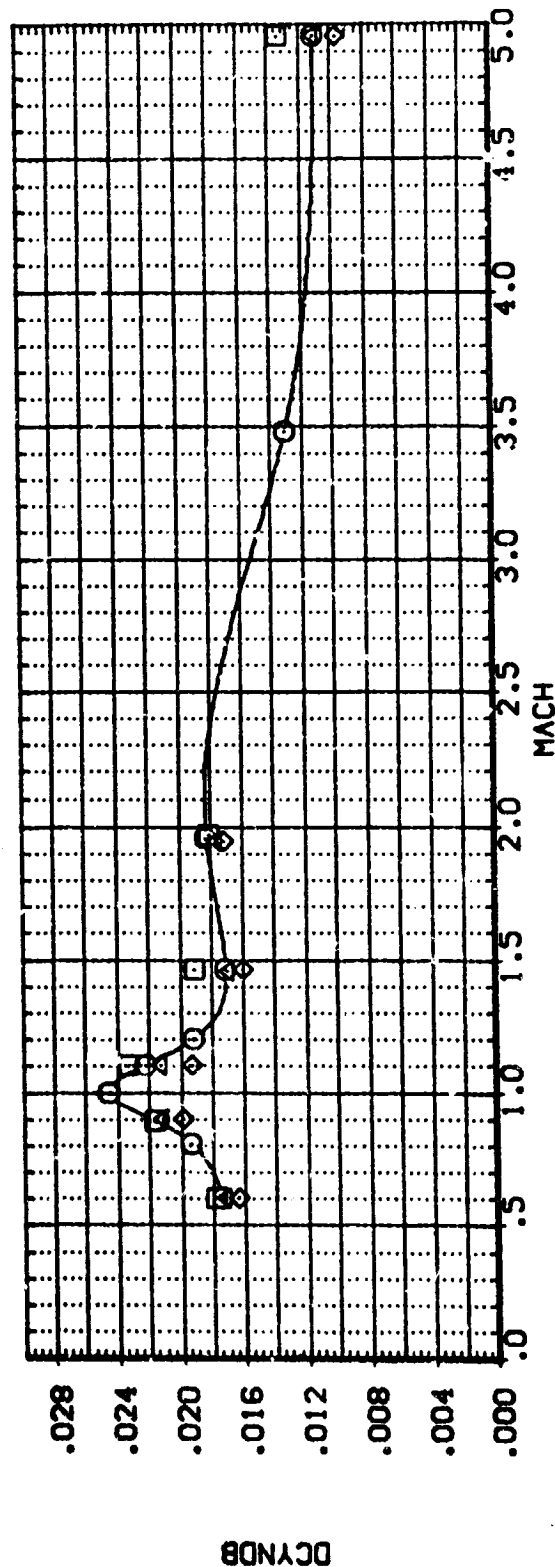
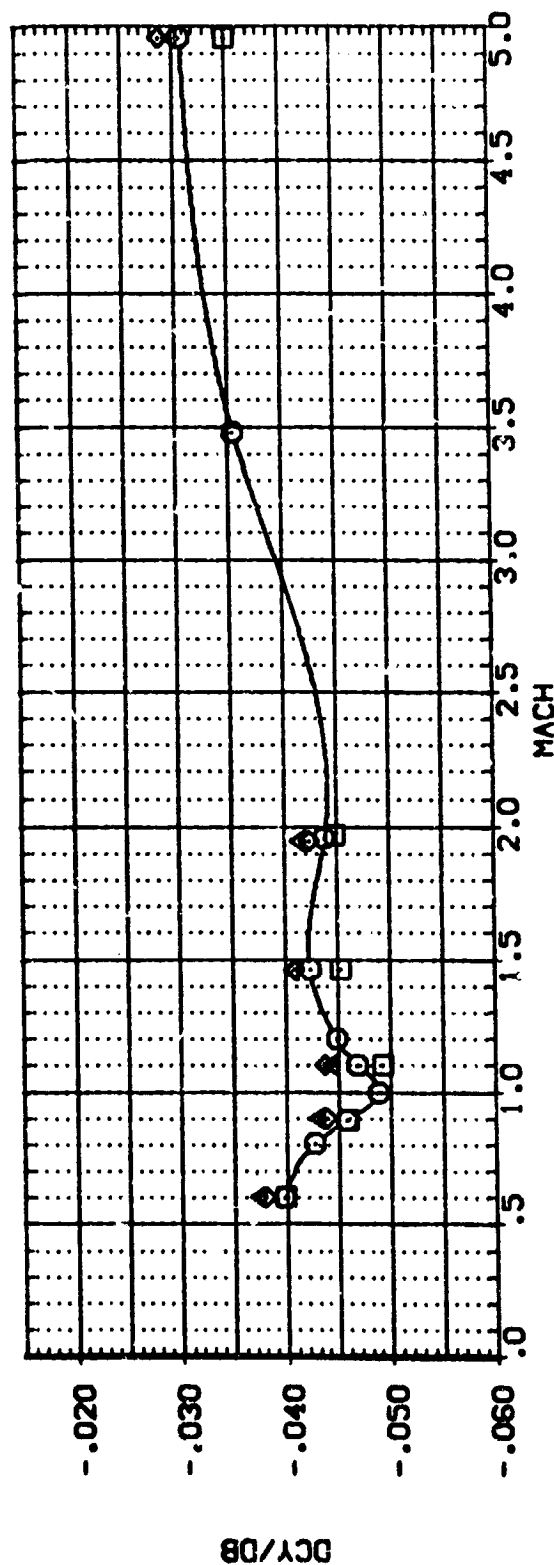
REFERENCE INFORMATION
 SREF 6.1900 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010

ALPHA 0.000
 ORINC .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 [888006] MSFC 580(1A48) (034)(T9)(S12)
 [888007] MSFC 580(1A48) (034)(T14)(S12)
 [888008] MSFC 580(1A48) (034)(T14)(S12)(U6)



ALPHA	ORBITAL
.000	.000
-5.000	.000
5.000	.000
.000	.000



EFFECT OF MACH NO. ON DIRECT. CHARACT.(FIRST STAGE)WITH AND W/O ATTACK-PROTUB.



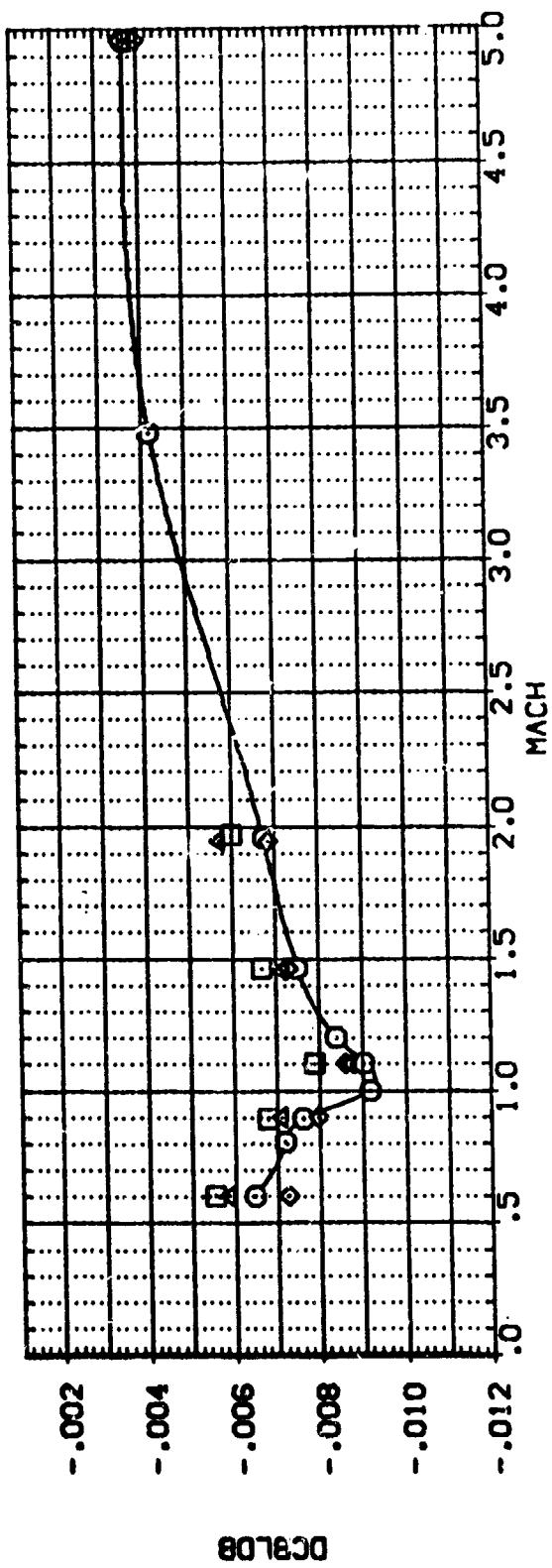
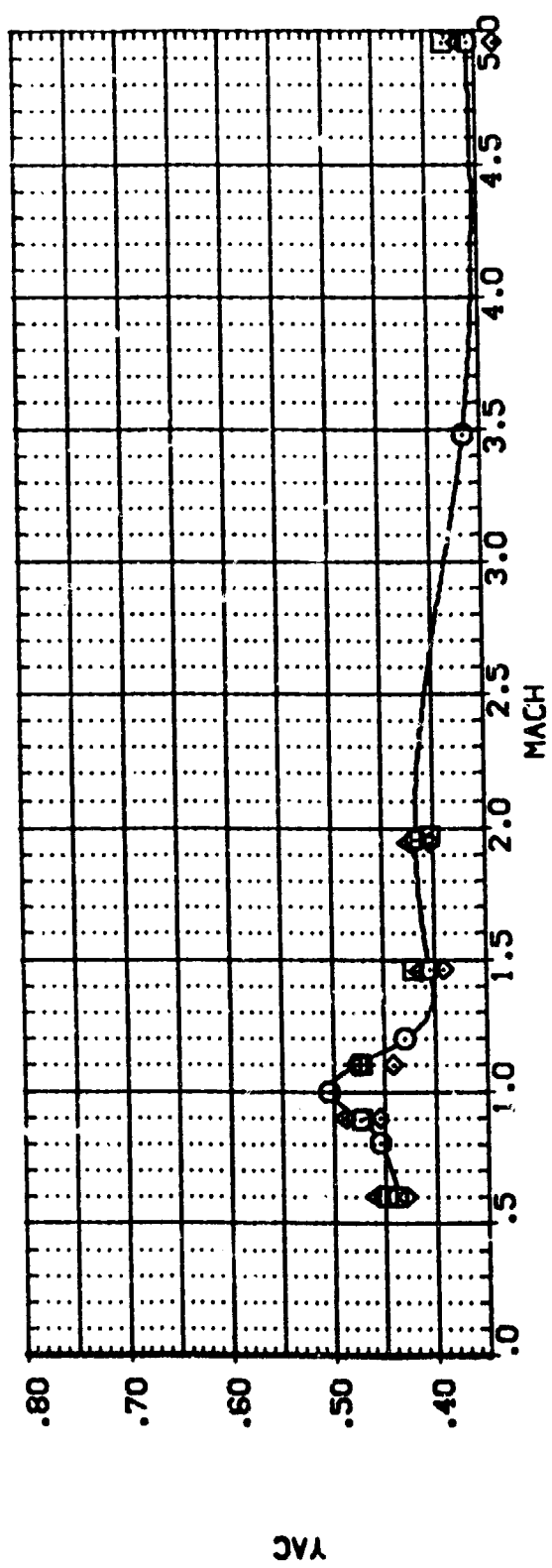
DATA SET SYMBOL: (888011) (888010) (888012) (888008)

CONFIGURATION DESCRIPTION: NSFC 579(A37) (034)(T14)(S12)(U6) NSFC 579(A37) (034)(T14)(S12)(U6) NSFC 579(A37) (034)(T14)(S12)(U6) NSFC 579(A37) (034)(T9)(S12)

ALPHA: .000 .000 .000 .000

ORBIT: .000 .000 .000 .000

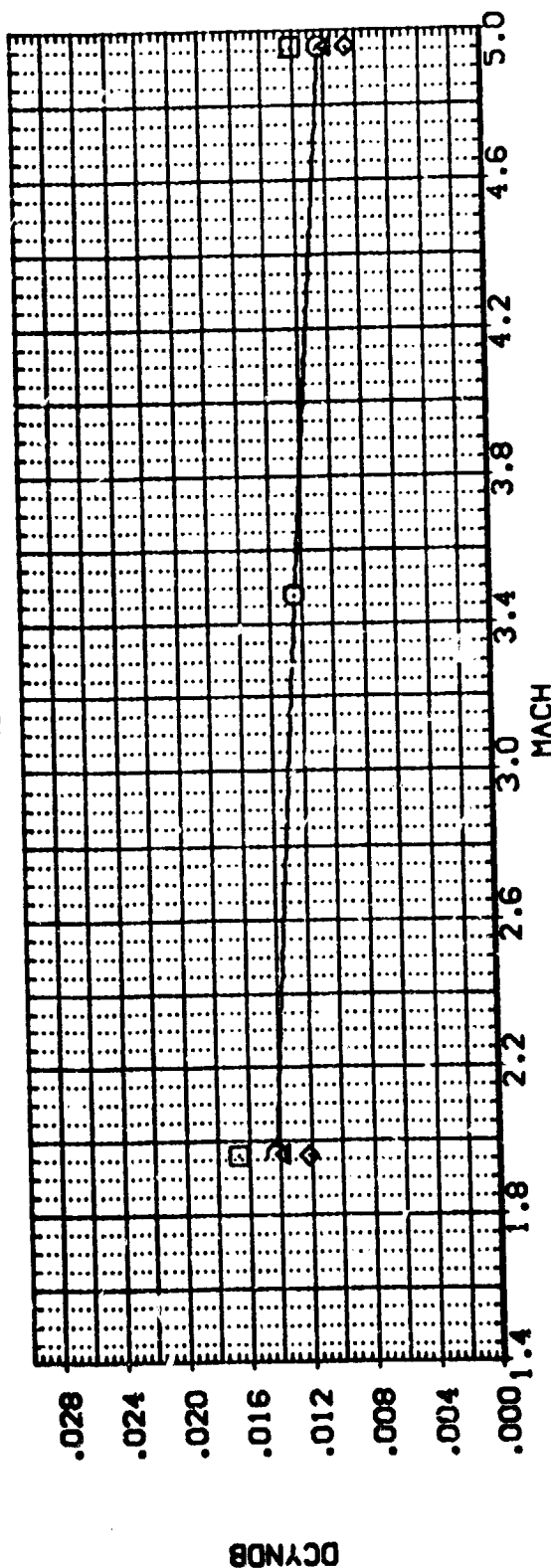
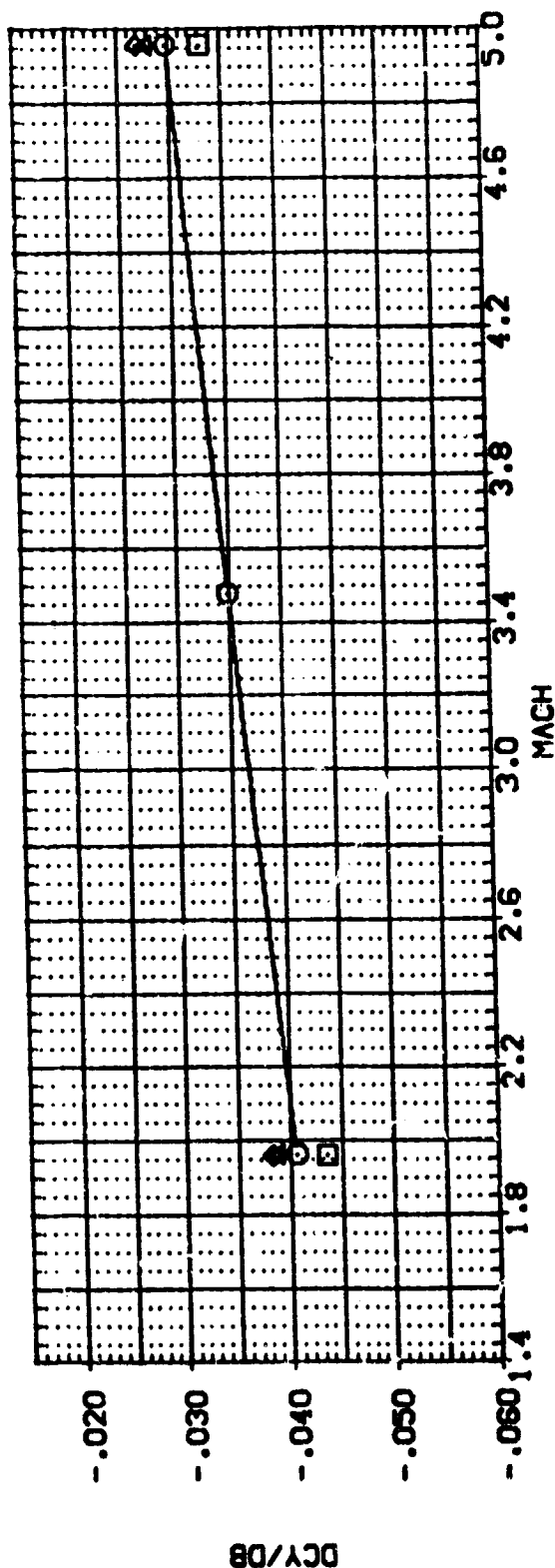
REFERENCE INFORMATION: SREF 6.1800 50. IN. LREF 5.1600 IN. BREF 5.1600 IN. XTRP 2.7200 IN. YTRP .0000 IN. ZTRP .0000 IN. SCALE .0040



REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

ALPHA ORIGIN
 .000
 .000
 .000
 .000
 .000
 .000

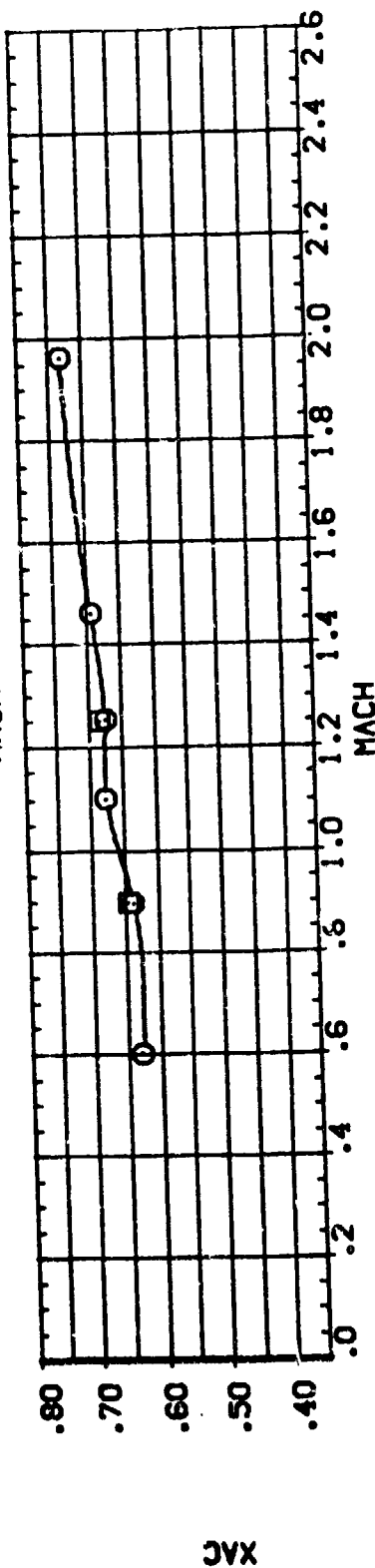
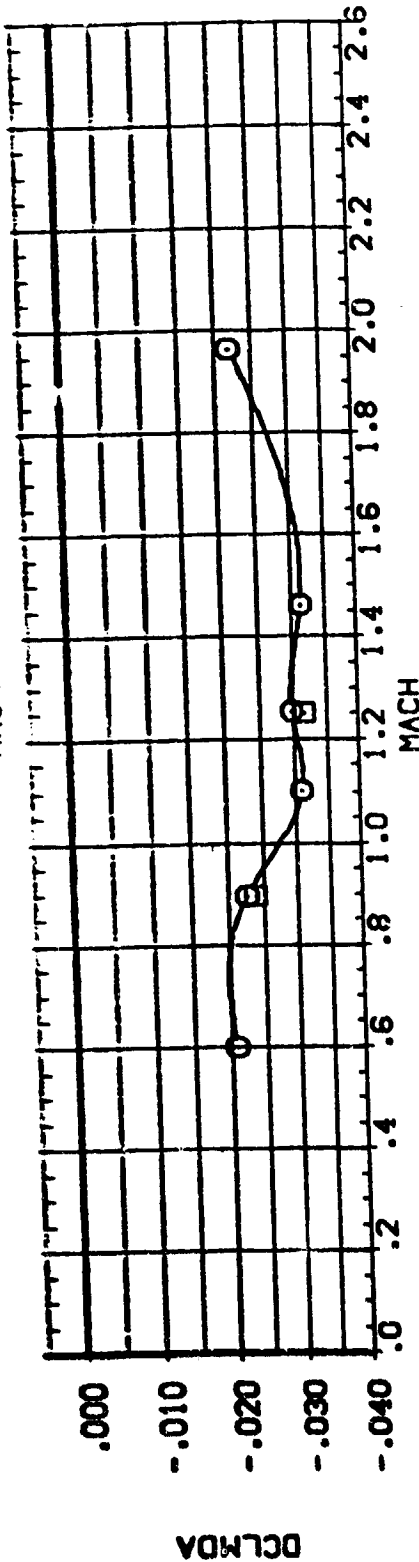
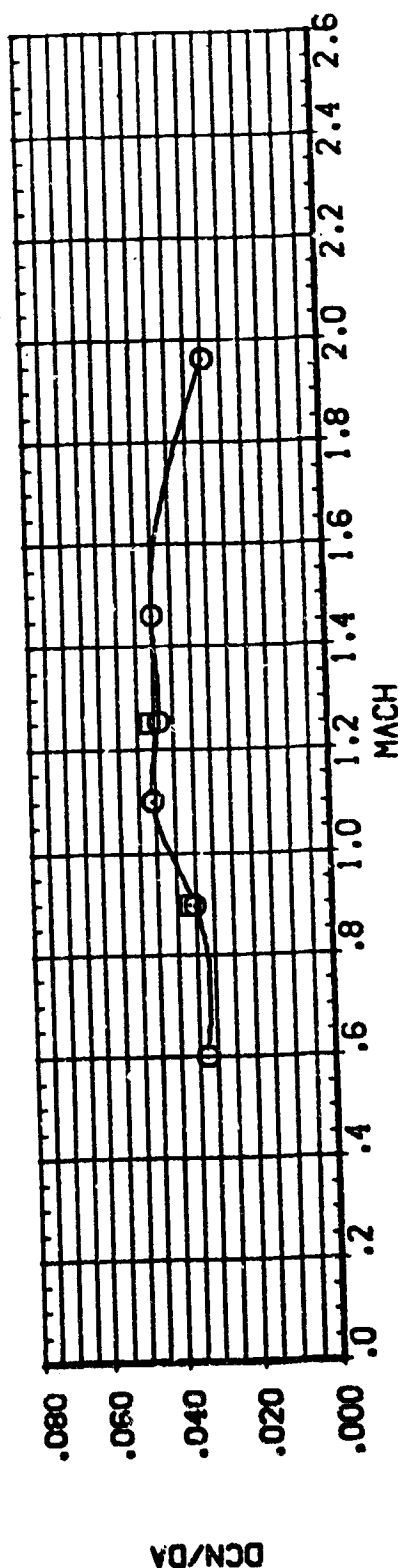
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888005) 579(1A37) (034)(T14)(U7)
 (888004) 3(1A37) (034)(T14)(U7)
 (888005) 579(1A37) (034)(T14)(U7)
 (888002) 579(1A37) (034)(T9)



EFFECT OF MACH NO. ON DIRECT. CHARACT. (SECOND STAGE) WITH AND W/O ATTACH-PROTUB.

•

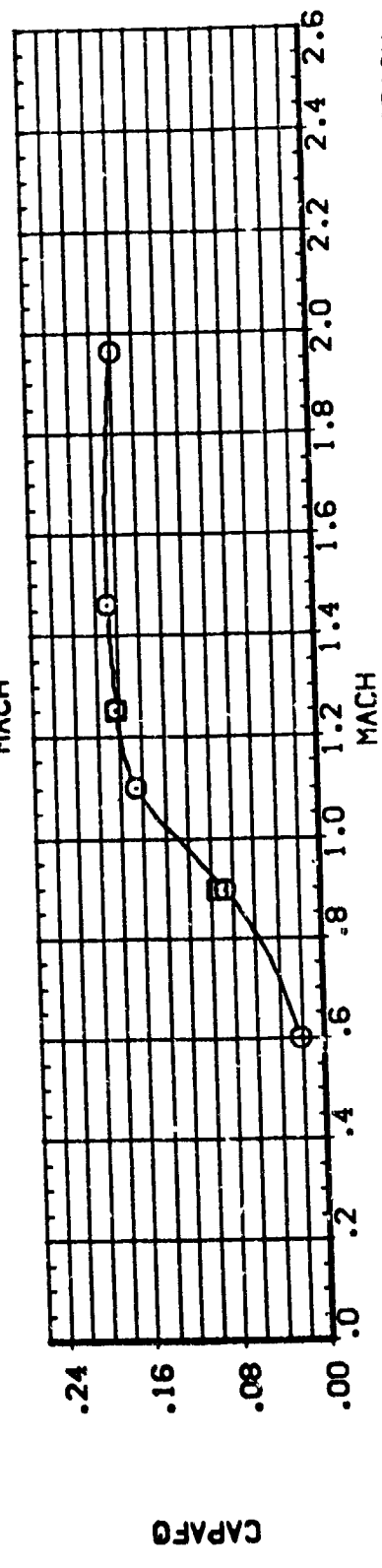
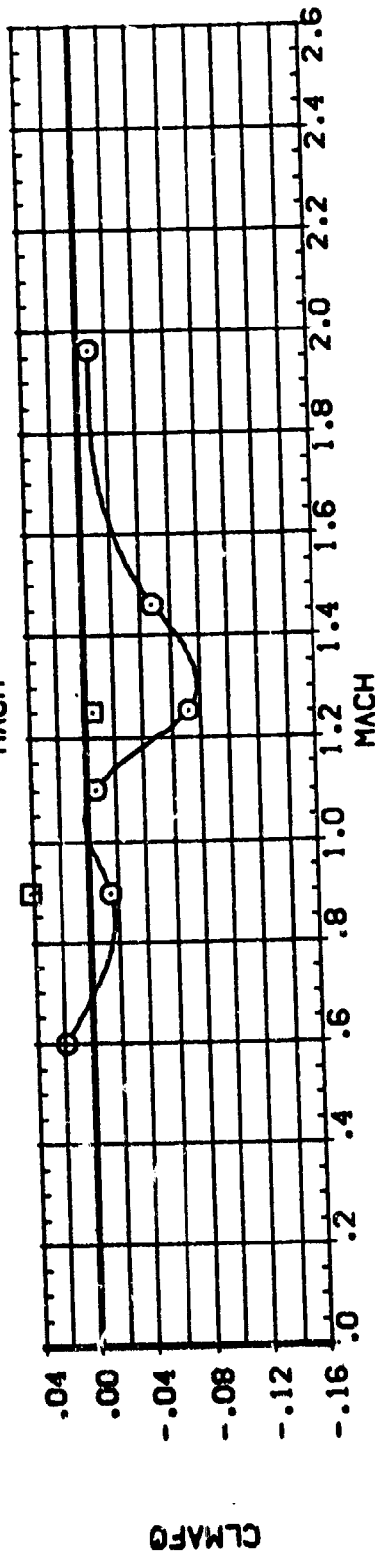
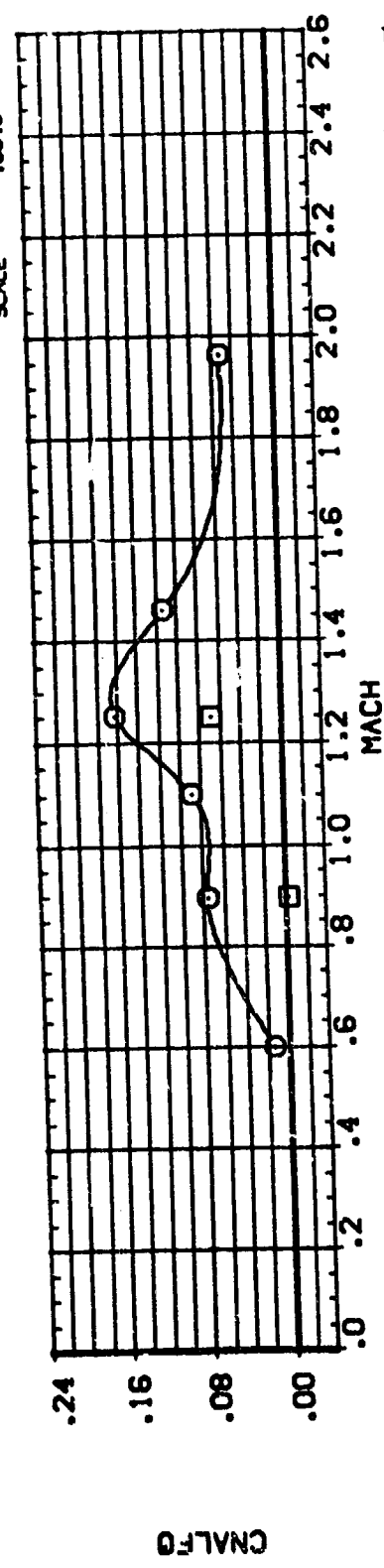
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(B86005)	MSFC 580(1A48)
(B86008)	MSFC 580(1A48) (034)(T9)(S12)



REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) MSFC 5801(A48) (034)(T9)(S12)
 (B89008) MSFC 5801(A48) (034)(T9)(S12) (ATTACH POST OFF)



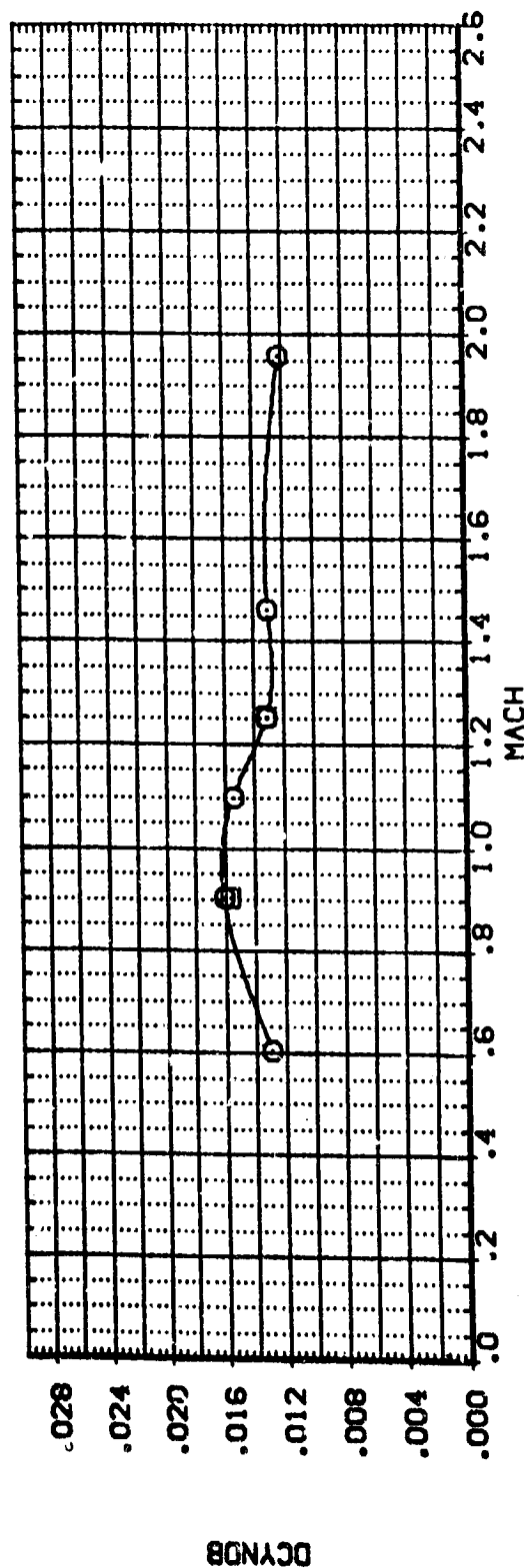
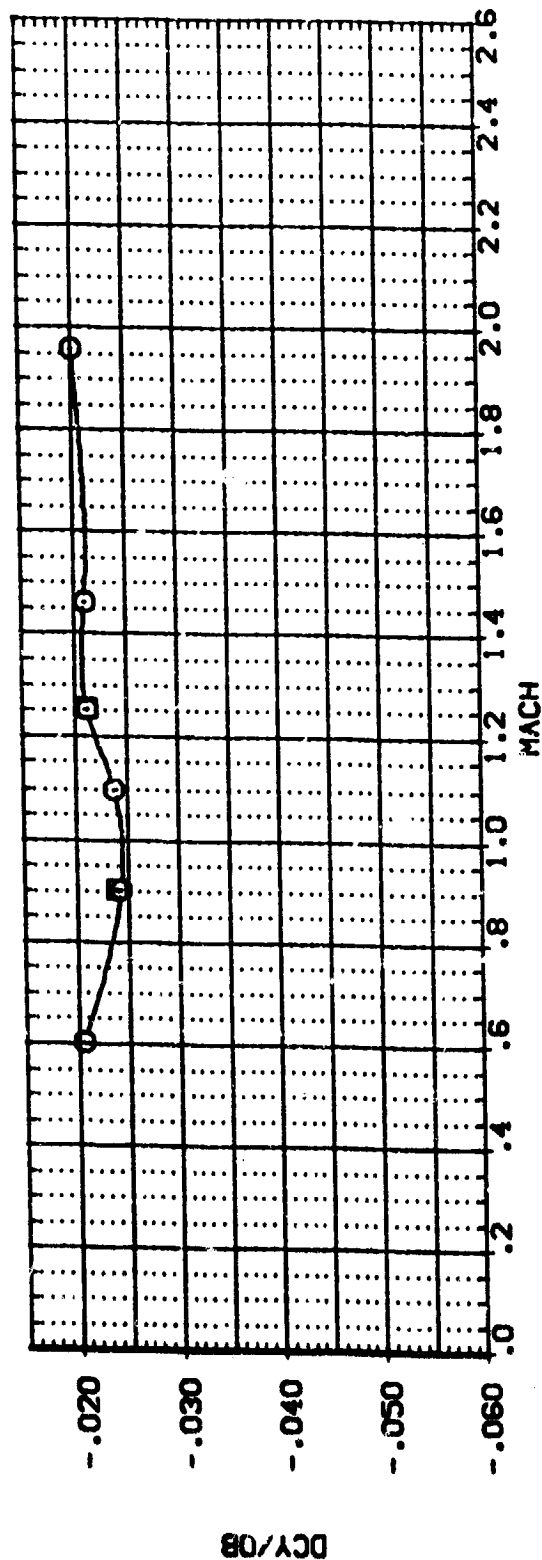
EFFECT OF MACH NO. ON LONGITUDINAL CHARACTERISTICS OF ORBITER W/AND W/O ATTACH.
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DATA SET SYMBOL (889006) (889007)

CONFIGURATION DESCRIPTION
 MSFC 580(1A48) (034)(19)(S12)
 MSFC 580(1A48) (034)(19)(S12) (ATTACH POST OFF)

ALPHA ORBINC
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0010



EFFECT OF MACH NO. ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER W/AND W/O ATTACH.

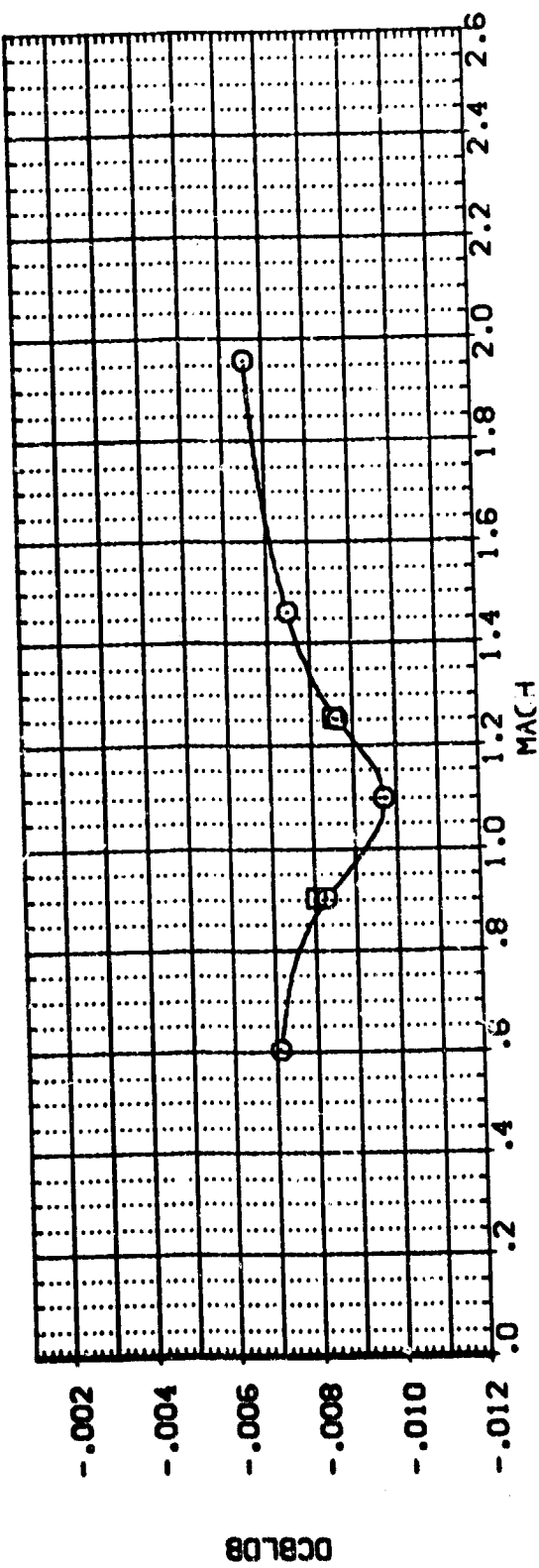
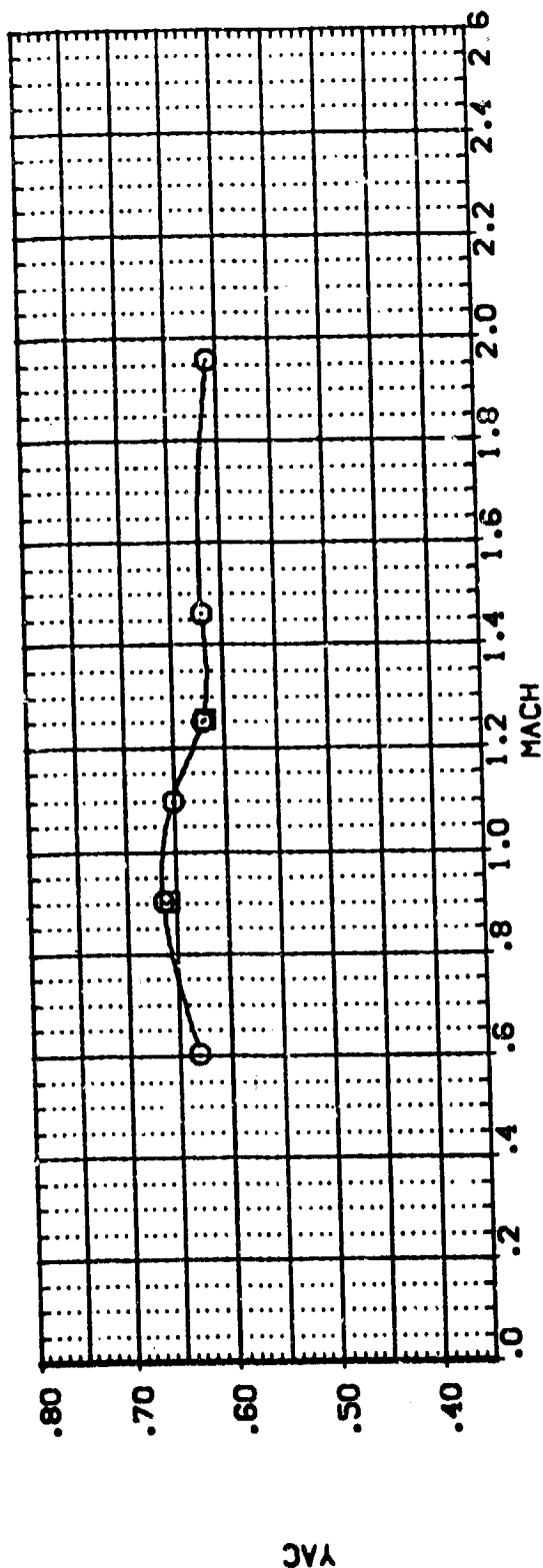


DATA SET SYMBOL
(888006)
(888007)

CONFIGURATION DESCRIPTION
MSFC 580(1A48) (034)(TS)(S12)
MSFC 580(1A48) (034)(TS)(S12) (ATTACH POST OFF)

ALPHA ORBINC
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1580 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0040



EFFECT OF MACH NO. ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER W/AND W/O ATTACH.

APPENDIX

TABULATED SOURCE DATA

Plotted data tabulations are
available on request from DMS.

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TABULATED SOURCE DATA, MFC 578-980 (1A-37,1A48)

(R00001) (31 AUG 73)

MFC 578 (1A37) (054) (79)

REFERENCE DATA

REF = 0.1000 IN. 100P = 2.7000 IN.
LREF = 5.1000 IN. 100P = .0300 IN.
BREF = 9.1000 IN. 200P = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTA = 30.000

MIN NO. 51/ 0 RVL = 7.01 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	CH	CLM	CY	CYN	CEL	CAF	CBO	CBO	CABT	CABS
1.048	-9.540	-2.070	.21800	-.00257	.00480	-.00080	.19200	.00500	.00500	.04800	.00000
1.049	-7.980	-3.040	.17740	-.00050	.00280	-.00110	.19130	.00110	.00110	.04350	.00000
1.049	-5.430	-2.450	.13480	.00140	.00220	-.00080	.19780	.00530	.00530	.04470	.00000
1.049	-9.370	-1.020	.06440	.00170	.00190	-.00080	.19950	.00340	.00340	.04360	.00000
1.049	-1.880	-.07710	.04880	.00130	.00110	-.00170	.14480	.00560	.00560	.04310	.00000
1.049	.800	.02980	-.00210	.07220	.00280	-.00090	.19360	.00560	.00560	.04150	.00000
1.049	2.910	.11080	-.04280	.00240	.00120	-.00130	.16880	.00570	.00570	.03720	.00000
1.049	9.020	.19480	-.07290	.00380	.00210	-.00110	.19100	.00580	.00580	.03540	.00000
1.049	7.310	.28070	-.12740	.00180	.00260	-.00090	.16880	.00590	.00590	.03410	.00000
1.049	9.250	.36170	-.21650	.00320	.00210	-.00090	.16450	.00620	.00620	.03370	.00000
1.049	11.080	.42940	-.18050	.00170	.00260	-.00110	.16350	.00630	.00630	.03150	.00000
1.049	.820	.02100	.00210	.00280	.00140	-.00110	.16350	.00630	.00630	.03150	.00000
1.049	.04250	-.02136	-.00216	.00280	-.00018	-.00004	-.00059	.00004	.00004	-.00078	.00000

MIN NO. 57/ 0 RVL = 5.05 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	CH	CLM	CY	CYN	CEL	CAF	CBO	CBO	CABT	CABS
4.999	-9.250	-.26800	.10810	.00720	-.00080	.00050	.20410	.00120	.00120	.00810	.00000
4.999	-7.350	-.21800	.08570	.00540	.00010	.00030	.19410	.00120	.00120	.00820	.00000
4.999	-5.270	-.16540	.07430	.00780	-.00070	.00030	.18200	.00120	.00120	.00830	.00000
4.999	-3.280	-.11960	.05670	.00580	-.00060	.00060	.17170	.00180	.00180	.00820	.00000
4.999	-1.270	-.06960	.03910	.00580	-.00120	.00040	.16310	.00090	.00090	.00780	.00000
4.999	.780	-.02360	.02780	.00420	.00090	.00070	.15370	.00120	.00120	.00750	.00010
4.999	2.780	.02230	.01140	.00240	.00130	.00000	.15000	.00120	.00120	.00670	.00000
4.999	4.800	.04430	-.00070	.00290	-.00070	.00010	.14480	.00130	.00130	.00620	.00000
4.999	6.840	.11400	-.01950	.00280	-.00020	.00000	.14280	.00130	.00130	.00590	.00000
4.999	8.980	.16880	-.03530	.00460	-.00010	.00040	.13630	.00130	.00130	.00540	.00000
4.999	10.680	.20810	-.04880	.00900	.00040	.00000	.13420	.00130	.00130	.00500	.00000
4.999	.780	-.02370	.00880	.00410	.00030	.00010	.13680	.00130	.00130	.00460	.00000
GRADIENT		.02273	-.00750	-.00044	.00012	-.00007	-.00037	.00001	.00001	-.00022	.00000

(0000002) (31 AUG 75)

MOPC 579 (IA37) (054) (79)

REFERENCE DATA

MOPC = 0.1000 SR. IN. MOPC = 2.7000 IN.
 LOPC = 0.1000 IN. YOPC = 0.0000 IN.
 SOPC = 0.1000 IN. ZOPC = 0.0000 IN.
 SCALE = .0040

ALPHA = .000 CRBINC = .000
 DELTAZ = 30.000

PARAMETRIC DATA

RUN NO. 58/ 0 RWL = 7.01 GRADIENT INTERVAL = -7.00/ 7.00

WCH	BETA	CH	CLJ	CY	CYN	CEL	CAF	QBP	CBO	CABT	CABS
1.901	-10.300	.00700	-.00480	.46400	-.17200	.07600	.17910	.00680	.03240	.04590	.00000
1.901	-9.240	.01070	-.00610	.39530	-.15010	.06170	.17960	.00650	.03060	.04560	.00000
1.901	-8.040	.00790	.00190	.25080	-.08670	.04390	.16410	.00600	.02950	.04050	.00000
1.901	-9.800	.00510	.00390	.15780	-.05230	.02660	.16950	.00610	.02660	.04110	.00000
1.901	-1.750	.00400	.01110	.07680	-.02430	.01270	.16950	.00570	.02720	.04150	.00000
1.901	.480	.00340	.01200	-.00330	.00390	-.00190	.16950	.00580	.02630	.04170	.00000
1.901	2.570	.00220	.01160	-.00800	.00300	-.01590	.16950	.00570	.02690	.04060	.00000
1.901	4.720	.00060	.00960	-.16590	.00910	-.00040	.16970	.00600	.02630	.04160	.00000
1.901	6.810	.00060	.00780	-.26080	.00560	-.04720	.16570	.00650	.02660	.04310	.00000
1.901	9.110	.00270	.00410	-.37030	.14000	-.06320	.16950	.00650	.03180	.04900	.00000
1.901	11.080	-.00370	.00520	-.47220	.17950	-.08040	.16130	.00670	.02610	.04110	.00000
1.901	.480	.00360	.01210	-.04960	.00450	-.00260	.16330	.00550	.02602	.00002	.00000
1.901		-.00044	.00099	-.00679	.01377	-.00688	-.00008	.00001		.00001	.00000

GRADIENT

RUN NO. 59/ 0 RWL = 5.10 GRADIENT INTERVAL = -7.00/ 7.00

WCH	BETA	CH	CLJ	CY	CYN	CEL	CAF	QBP	CBO	CABT	CABS
4.909	-9.680	-.01670	.01500	.29180	-.10250	.04310	.17370	.00080	.00400	.00670	.00000
4.909	-7.780	-.02360	.01740	.22770	-.08120	.03610	.26780	.00110	.00590	.00660	.00000
4.909	-9.670	-.02970	.02550	.16530	-.05710	.02210	.16340	.00130	.00610	.00680	.00000
4.909	-8.640	-.03750	.02620	.10510	-.03700	.01710	.15770	.00130	.00630	.00630	.00000
4.909	-1.300	-.02940	.00030	.02670	-.01010	.00690	.15960	.00130	.00640	.00710	.00000
4.909	.480	-.02780	.02620	-.00950	.00250	-.00110	.15620	.00130	.00630	.00760	.00000
4.909	2.450	-.04040	.03240	-.06190	.02280	-.00920	.15650	.00130	.00630	.00710	.00000
4.909	4.480	-.03770	.03110	-.15030	.04270	-.01840	.15690	.00140	.00640	.00690	.00000
4.909	6.590	-.03110	.02650	-.17680	.03300	-.02700	.16410	.00130	.00660	.00680	.00000
4.909	8.990	-.03590	.02700	-.24060	.05690	-.03640	.16780	.00130	.00650	.00680	.00000
4.909	10.480	-.02530	.02110	-.30670	.11160	-.04670	.17180	.00140	.00670	.00700	.00000
4.909	.410	-.03590	.02680	-.00010	.00770	-.00130	.15670	.00140	.00660	.00710	.00000
4.909		-.00016	.00006	-.00600	.00045	-.00415	.00001	.00001	.00003	.00002	.00000

GRADIENT

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TABULATED SOURCE DATA, NPFC 579-560 (IA-37,IA48)

(086003) (31 AUG 75)

NPFC 579 (IA37) (054) (T14) (U7)

PARAMETRIC DATA

REFERENCE DATA

SHIP = 6.1000 IN. IN. 2.7500 IN.
 LWP = 5.1000 IN. IN. 0.0000 IN.
 WWP = 5.1000 IN. IN. 0.0000 IN.
 SCALE = .0040

BETA = .000 CRBINC = .000
 DELTAZ = 30.000

RUN NO. 56/ 0 RWL = 6.94 GRADIENT INTERVAL = -7.00/ 7.00

WICH	ALPHA	ON	CLM	CY	CYN	CEL	CAF	QBO	CBO	CABT	CABS
1.968	-9.560	-41.670	.21020	.00470	.00310	.00140	.21150	.00460	.02280	.04270	.00000
1.968	-7.150	-38.060	.16460	.00550	.00290	.00090	.20530	.00460	.02200	.03970	.00000
1.968	-5.440	-25.360	.12120	.00750	.00170	.00100	.21220	.00440	.02100	.03900	.00000
1.968	-3.360	-14.670	.07660	.00710	.00100	.00060	.20620	.00450	.02130	.03970	.00000
1.968	-1.270	-05.690	.03500	.00750	.00040	.00020	.23240	.00460	.02210	.03880	.00000
1.968	.860	.03760	-.01310	.00660	.00070	-.00010	.20210	.00490	.02320	.03660	.00000
1.968	2.800	.12150	-.05590	.00770	-.00130	-.00030	.20110	.00500	.02560	.03790	.00000
1.968	4.860	.20360	-.09490	.00660	-.00210	-.00030	.19680	.00510	.02410	.03520	.00000
1.968	7.060	.28020	-.13060	.00610	-.00300	-.00010	.19350	.00530	.02500	.03430	.00000
1.968	9.200	.35260	-.16440	.00760	-.00370	-.00010	.19090	.00540	.02540	.03290	.00000
1.968	11.060	.43450	-.19670	.00660	-.00360	.00000	.19170	.00560	.02740	.03140	.00000
1.968	.860	.03360	-.01060	.00610	-.00000	.00000	.19610	.00470	.02230	.03790	.00000
1.968	.04220	-.02096	-.00000	.00000	-.00036	-.00013	-.00058	.00007	.00032	-.00031	.00000

RUN NO. 1/ 0 RWL = 4.49 GRADIENT INTERVAL = -7.00/ 7.00

WICH	ALPHA	ON	CLM	CY	CYN	CEL	CAF	QBO	CBO	CABT	CABS
2.960	-7.360	-.28300	.11600	-.01540	.00640	-.00350	.20190	.00260	.01240	.02260	.00000
2.960	-5.360	-.19720	.08060	-.01650	.00780	-.00340	.19280	.00260	.01220	.02250	.00000
2.960	-3.280	-.13730	.06640	-.01500	.00640	-.00300	.18740	.00260	.01250	.02290	.00000
2.960	-1.560	-.07910	.04480	-.01370	.00590	-.00300	.18200	.00270	.01280	.02210	.00000
2.960	.770	-.01400	.02180	-.01340	.00590	-.00270	.17920	.00260	.01340	.02060	.00000
2.960	2.840	.06670	-.00850	-.01200	.00610	-.00260	.17310	.00300	.01480	.02050	.00000
2.960	4.870	.11690	-.03300	-.01300	.00310	-.00200	.17130	.00310	.01490	.02020	.00000
2.960	6.860	.16210	-.06960	-.01050	.00240	-.00150	.16840	.00330	.01560	.01910	.00000
2.960	8.810	.20310	-.09120	-.01050	.00110	-.00170	.16430	.00330	.01570	.01850	.00000
2.960	.770	-.01630	.02260	-.01340	.00590	-.00270	.17990	.00260	.01330	.02040	.00000
2.960	.03184	-.01232	-.00000	.00040	-.00041	.00015	-.00200	.00006	.00029	-.00032	.00000

RUN NO. 2/ 0 RWL = 6.95 GRADIENT INTERVAL = -7.00/ 7.00

WICH	ALPHA	ON	CLM	CY	CYN	CEL	CAF	QBO	CBO	CABT	CABS
3.479	-9.560	-.31200	.12640	-.01460	.00710	-.00330	.20670	.00210	.01000	.01630	.00000
3.479	-7.430	-.25600	.10740	-.01350	.00670	-.00310	.19920	.00210	.01000	.01650	.00000
3.479	-5.370	-.18660	.08440	-.01410	.00640	-.00280	.19210	.00200	.00940	.01640	.00000
3.479	-3.330	-.13590	.06600	-.01400	.00590	-.00290	.18260	.00200	.00970	.01770	.00000
3.479	-1.290	-.07560	.04440	-.01360	.00530	-.00260	.17640	.00210	.01020	.01730	.00000
3.479	.770	-.01940	.02390	-.01270	.00400	-.00220	.17060	.00230	.01090	.01610	.00000
3.479	2.830	.04370	.00020	-.01160	.00360	-.00200	.16840	.00240	.01140	.01560	.00000
3.479	4.870	.10000	-.02260	-.01040	.00320	-.00200	.16340	.00250	.01180	.01520	.00000
3.479	.02639	-.01050	-.00000	.00037	-.00040	.00025	-.00266	.00005	.00025	-.00033	.00000

TABULATED SOURCE DATA, NSFC 579-580 (1A-37, 1A48)

(R880013) (31 AUG 73)

1459C 579 (1A37) (034) (TX4) (U7)

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTAZ = 30.000

REFERENCE DATA

0007	=	6.1900 IN.	1000	=	2.7200 IN.
1007	=	5.1600 IN.	1000	=	.0300 IN.
0007	=	5.1600 IN.	2000	=	0.0000 IN.
SCALE #		.0040			

RUN NO.	S / O	RAWL	5.20	GRADIENT INTERVAL	-7.50/	7.00
1	0	0.00	0.00	0.00	0.00	0.00
2	0	0.00	0.00	0.00	0.00	0.00
3	0	0.00	0.00	0.00	0.00	0.00
4	0	0.00	0.00	0.00	0.00	0.00
5	0	0.00	0.00	0.00	0.00	0.00
6	0	0.00	0.00	0.00	0.00	0.00
7	0	0.00	0.00	0.00	0.00	0.00
8	0	0.00	0.00	0.00	0.00	0.00
9	0	0.00	0.00	0.00	0.00	0.00
10	0	0.00	0.00	0.00	0.00	0.00
11	0	0.00	0.00	0.00	0.00	0.00
12	0	0.00	0.00	0.00	0.00	0.00
13	0	0.00	0.00	0.00	0.00	0.00
14	0	0.00	0.00	0.00	0.00	0.00
15	0	0.00	0.00	0.00	0.00	0.00
16	0	0.00	0.00	0.00	0.00	0.00
17	0	0.00	0.00	0.00	0.00	0.00
18	0	0.00	0.00	0.00	0.00	0.00
19	0	0.00	0.00	0.00	0.00	0.00
20	0	0.00	0.00	0.00	0.00	0.00
21	0	0.00	0.00	0.00	0.00	0.00
22	0	0.00	0.00	0.00	0.00	0.00
23	0	0.00	0.00	0.00	0.00	0.00
24	0	0.00	0.00	0.00	0.00	0.00
25	0	0.00	0.00	0.00	0.00	0.00
26	0	0.00	0.00	0.00	0.00	0.00
27	0	0.00	0.00	0.00	0.00	0.00
28	0	0.00	0.00	0.00	0.00	0.00
29	0	0.00	0.00	0.00	0.00	0.00
30	0	0.00	0.00	0.00	0.00	0.00
31	0	0.00	0.00	0.00	0.00	0.00
32	0	0.00	0.00	0.00	0.00	0.00
33	0	0.00	0.00	0.00	0.00	0.00
34	0	0.00	0.00	0.00	0.00	0.00
35	0	0.00	0.00	0.00	0.00	0.00
36	0	0.00	0.00	0.00	0.00	0.00
37	0	0.00	0.00	0.00	0.00	0.00
38	0	0.00	0.00	0.00	0.00	0.00
39	0	0.00	0.00	0.00	0.00	0.00
40	0	0.00	0.00	0.00	0.00	0.00
41	0	0.00	0.00	0.00	0.00	0.00
42	0	0.00	0.00	0.00	0.00	0.00
43	0	0.00	0.00	0.00	0.00	0.00
44	0	0.00	0.00	0.00	0.00	0.00
45	0	0.00	0.00	0.00	0.00	0.00
46	0	0.00	0.00	0.00	0.00	0.00
47	0	0.00	0.00	0.00	0.00	0.00
48	0	0.00	0.00	0.00	0.00	0.00
49	0	0.00	0.00	0.00	0.00	0.00
50	0	0.00	0.00	0.00	0.00	0.00
51	0	0.00	0.00	0.00	0.00	0.00
52	0	0.00	0.00	0.00	0.00	0.00
53	0	0.00	0.00	0.00	0.00	0.00
54	0	0.00	0.00	0.00	0.00	0.00
55	0	0.00	0.00	0.00	0.00	0.00
56	0	0.00	0.00	0.00	0.00	

NAME	ALPHA	ON	CLM	C	CYN	CEL	CAF	QSO	CASO	CABT	CASS
4.989	-7.310	-0.28060	0.06330	-0.01190	0.00850	-0.00170	0.21370	-0.00060	-0.00370	0.00650	0.00000
4.989	-5.270	-0.17250	0.07680	-0.01170	0.00810	-0.00140	0.19360	0.00060	0.00310	0.00650	0.00000
4.989	-3.820	-0.12250	0.05950	-0.01550	0.00840	-0.00190	0.16360	0.00070	0.00370	0.00650	0.00000
4.989	-1.1250	-0.07750	0.04350	-0.02500	0.00900	-0.00150	0.16950	0.00080	0.00370	0.00650	0.00000
4.989	-0.05130	-0.03960	0.02960	-0.01320	0.00950	-0.00160	0.16400	0.00080	0.00410	0.00650	0.00000
4.977	2.760	0.01610	0.01360	-0.01310	0.00350	-0.00140	0.57200	0.00080	0.00420	0.00460	0.00000
4.959	4.840	0.06360	-0.00150	-0.01300	0.00250	-0.00160	0.15400	0.00090	0.00450	0.00340	0.00000
4.959	6.860	0.10960	-0.01790	-0.01090	0.00170	-0.00150	0.14640	0.00090	0.00450	0.00300	0.00000
4.959	8.860	0.16310	-0.03700	-0.01260	0.00230	-0.00110	0.14110	0.00090	0.00450	0.00460	0.00000
4.959	-0.02750	0.02680	-0.01310	-0.01310	0.00350	-0.00040	0.16810	0.00090	0.00450	0.00560	0.00000
4.959	-0.02322	-0.00777	0.00331	-0.00047	-0.00047	0.0002	-0.00377	0.00002	0.00010	-0.00012	0.00000

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TABULATED SOURCE DATA, NSPC 579-300 (1A-37,1A48)

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(000004) (31 AUG 73)

NSPC 579 (1A37) (004) (714) (UT)

REFERENCE DATA

5007 = 6.1900 IN. 300P = 2.7500 IN.
 5007 = 6.1900 IN. 100P = .0000 IN.
 5007 = 6.1900 IN. 200P = .0000 IN.
 SCALE = .0040

ALPHA = -5.000 ORIGIN = .000
 DELTA Z = 30.000

PARAMETRIC DATA

RUN NO. 95/ 0 RVL = 6.96 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	ON	CLM	CY	CYN	CEL	CAF	CSO	CBO	CST	CBS
1.000	-10.340	-21.940	.09690	.49750	-.19040	.04670	.20400	.00680	.02580	.04940	.00000
1.000	-8.270	-.21010	.09690	.34510	-.14680	.04670	.20170	.00680	.02580	.04940	.00000
1.000	-6.070	-.20640	.10010	.28030	-.10450	.03380	.20400	.00680	.02760	.04820	.00000
1.000	-5.850	-.20590	.10410	.18080	-.06490	.03480	.20460	.00680	.02960	.04690	.00000
1.000	-1.760	-.20750	.10960	.06660	-.03000	.01680	.20460	.00510	.02400	.04380	.00000
1.000	.410	-.21080	.11420	-.00460	.00570	-.00000	.20680	.00470	.02250	.04180	.00000
1.000	2.980	-.21470	.11370	-.09750	.04000	-.01810	.20680	.00470	.02250	.04180	.00000
1.000	4.750	-.21800	.11290	-.18050	.07680	-.03550	.20640	.00510	.02450	.04310	.00000
1.000	6.800	-.21990	.11180	-.29080	.11480	-.06450	.20360	.00580	.02770	.04670	.00000
1.000	9.140	-.22080	.11360	-.40470	.15660	-.07420	.20360	.00680	.03000	.05080	.00000
1.000	11.130	-.22640	.11530	-.51150	.20170	-.08660	.20130	.00610	.03240	.04140	.00000
1.000	.410	-.20960	.11290	-.00660	.00610	-.00210	.20110	.00470	.02240	.04140	.00000
1.000	GRADIENT	-.00096	.00755	-.04532	.01665	-.00916	.00016	-.00009	-.00019	.00002	.00000

RUN NO. 9/ 0 RVL = 4.97 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	ON	CLM	CY	CYN	CEL	CAF	CSO	CBO	CST	CBS
4.000	-1.710	-.14680	.08590	.25960	-.06550	.03640	.20180	.00130	.00610	.00680	.00000
4.000	-3.680	-.15180	.08280	.18960	-.07010	.02670	.19960	.00130	.00680	.00710	.00000
4.000	-5.682	-.15960	.07100	.12900	-.04380	.01710	.19540	.00130	.00680	.00740	.00000
4.000	-1.880	-.16480	.07240	.03980	-.02100	.00980	.19160	.00130	.00650	.00760	.00000
4.000	.480	-.16930	.07080	-.01360	.00500	-.00840	.18690	.00120	.00600	.00770	.00000
4.000	2.460	-.17480	.06810	-.07790	.02660	-.01940	.20270	-.00090	-.00450	.00860	.00000
4.000	4.540	-.17940	.06070	-.14770	.03350	-.02230	.19790	.00120	.00570	.00790	.00000
4.000	6.580	-.18540	.07440	-.21750	.07900	-.03210	.20680	.00130	.00610	.00770	.00000
4.000	8.580	-.19270	.07220	-.28340	.10410	-.04150	.20740	.00130	.00630	.00810	.00000
4.000	.440	-.19950	.07060	-.01200	.00140	-.00300	.18690	.00130	.00630	.00810	.00000
4.000	GRADIENT	-.00145	.00089	-.03316	.01207	-.00480	.00043	-.00004	-.00021	.00006	.00000

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1002C 579 (1A37) (054) (714) (J77)

REFERENCE DATA

0007	=	6.1160	88. IN.	1969	=	2.7800	IN.
0008	=	5.1600	IN.	1969	=	.0000	IN.
0009	=	5.1600	IN.	2049	=	.0000	IN.
0010	=						

PARAMETRIC DATA

ALPHA = .0000 COSTING = .0000
ZETA = 30.0000

00:1 700:1 - 700:1 00:1 700:1

WACH	BETA	ON	CLN	CY	CYN	CEL	CAN	CBO	CABT	CABS
1.982	-10.360	.00285	-.02447	.48863	-.17060	.08060	.19400	.00960	.04680	.00000
1.982	-9.880	.00760	-.02580	.37680	-.13480	.06950	.16640	.00850	.04400	.00000
1.982	-8.080	.01360	-.01130	.27140	-.09760	.04680	.17720	.00560	.02740	.00000
1.982	-8.860	.01600	-.00980	.17530	-.09380	.02960	.20080	.00930	.04080	.00000
1.982	-1.770	.01360	-.00060	.06660	-.02600	.01360	.20080	.02460	.04100	.00000
1.982	.410	.0110	.00140	.00100	-.00090	-.00060	.20000	.00480	.02970	.00000
1.982	2.370	.00700	.00460	-.06820	.03300	-.01900	.16910	.02440	.04300	.00000
1.982	4.790	.01210	.00070	-.16880	.00980	-.02940	.20040	.02540	.04160	.00000
1.982	6.800	.00360	.00040	-.26150	.06150	-.04600	.16030	.02720	.04620	.00000
1.982	9.140	.00020	.00040	-.37620	.13440	-.06360	.19620	.02670	.04680	.00000
1.982	11.120	-.00070	.00180	-.47750	.17370	-.07930	.16260	.03090	.04680	.00000
1.982	-.410	.01140	.00140	.00730	.02460	.00190	.20040	.02500	.04960	.00000
1.982	-.410	-.00060	-.00060	-.00040	.00060	-.00060	.00000	-.00004	.00037	.00000

Run No.	ΔT	$\Delta T/\Delta t$	Gradient Interval	$\Delta T/\Delta t$
1	0	0.29	-7.00	7.00

WACH	BETA	ON	CLN	CY	CYN	COL	CAF	CBO	CBO	CAPT	CABS
3.479	-7.960	-0.0210	01.4510	26080	-0.10187	0.4620	0.10010	0.0260	01.330	01.060	0.0000
3.479	-8.600	-0.0260	00240	80080	-0.07210	0.0030	0.1770	0.0260	01.230	01.770	0.0000
3.479	-3.710	-0.0440	02.060	13000	-0.04660	01.060	0.1700	0.0130	01.500	01.790	0.0000
3.479	-1.660	-0.0530	00.060	06040	-0.00060	0.0060	0.1750	0.0030	01.50	01.760	0.0000
3.479	4.60	-0.0680	00.120	-01.540	0.0260	-0.0020	0.17410	0.0030	01.60	01.670	0.0000
3.479	2.360	-0.0400	00.310	-0.0770	00.150	-0.01400	0.17960	0.0070	01.260	01.760	0.0000
3.479	4.660	-0.0610	00.040	-0.1610	0.0460	-0.0030	0.1750	0.0060	01.320	01.710	0.0000
3.479	6.750	-0.0820	02.450	-0.23670	0.0430	-0.0460	0.1770	0.0260	01.340	01.710	0.0000
3.479	8.660	-0.0660	01.940	-0.31400	01.260	-0.0460	0.16040	0.0090	01.360	01.740	0.0000
3.479	4.60	-0.0660	00.130	-0.01760	00.060	-0.0060	0.17410	0.0030	01.200	01.660	0.0000
3.479	-0.0010	-0.0010	00.010	-0.00460	01.242	-0.0036	-0.0002	0.0003	0.0012	-0.0007	0.0000

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TABULATED SOURCE DATA, NPFC 579-500 (1A-37,1A40)

NPFC 579 (1A37) (2B4) (T14) (U7)

(000000) (31 AUG 73)

REFERENCE DATA

XREF = 6.1900 IN. XREF = 2.7500 IN.
 YREF = 5.1600 IN. YREF = .0000 IN.
 ZREF = 5.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

ALPHA = .000 ORBINC = .000
 DELTAZ = 30.000

PARAMETRIC DATA

RUN NO. 4/ 0 REV. = 5.05 GRADIENT INTERVAL = -7.00/ 7.00

MACI	BETA	CH	CLN	CY	CYN	CSL	CAF	CBO	CABT	CAB
4.000	-7.700	-0.000	.01600	.22740	-.00000	.03410	.17790	.00410	.00000	.00000
4.000	-3.600	-.00040	.00000	.16070	-.00000	.02000	.17340	.00430	.00000	.00000
4.000	-3.610	-.00040	.00000	.10100	-.00000	.01500	.17010	.00420	.00000	.00000
4.000	-1.600	-.00000	.00040	.04400	-.01000	.00040	.16790	.00410	.00000	.00000
4.000	-.400	-.00010	.00140	-.01500	.00040	-.00000	.16040	.00410	.00000	.00000
4.000	2.400	-.00070	.02110	-.07950	.00000	-.00000	.16700	.00430	.00000	.00000
4.000	4.500	-.01400	.00400	-.13000	.04710	-.00000	.17470	.00440	.00000	.00000
4.000	6.570	-.00000	.00000	-.19750	.00720	-.00000	.17630	.00460	.00000	.00000
4.000	8.500	-.00070	.00440	-.26400	.00140	-.00040	.18200	.00460	.00000	.00000
4.000	-.450	-.00000	.00000	-.01900	.00070	-.00040	.16540	.00440	.00000	.00000
	GRADIENT	.00000	.00000	-.00076	.00000	-.00000	.00043	.00000	.00000	.00000

0806006 (31 AUG 75)

MNP 579 (IA37) (054) (T14) (U7)

REFERENCE DATA

CRCP = 9.1600 IN. XGRP = 2.7500 IN.
 LGRP = 9.1600 IN. YGRP = .0000 IN.
 BRCP = 9.1600 IN. ZGRP = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = 5.000 CRBINC = .000
 DELTAZ = 30.000

RUN NO. 54/ 0 RWL = 6.96 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	ON	CLM	CY	CYN	CEL	CAF	CBO	CABO	CABT	CARS
1.999	-10.400	.24100	-.12950	.47980	-.16910	.07120	.16960	.00730	.03530	.04390	.00000
1.999	-8.270	.22950	-.11880	.36940	-.12960	.05600	.16920	.00660	.03210	.04210	.00000
1.999	-8.080	.22720	-.11330	.28870	-.08720	.03630	.16230	.00630	.02980	.03960	.00000
1.999	-3.840	.22630	-.10940	.16930	-.05150	.02440	.16680	.00590	.02760	.03900	.00000
1.999	-1.770	.22410	-.10630	.06310	-.02490	.01120	.16330	.00550	.02590	.03720	.00000
1.999	.400	.22350	-.10310	.00310	-.00090	-.00060	.16760	.00530	.02530	.03540	.00000
1.999	2.370	.22190	-.10240	-.07640	.02430	-.01380	.16240	.00510	.02630	.03630	.00000
1.999	4.720	.22040	-.10220	-.15190	.04700	-.02470	.16340	.00590	.02810	.03750	.00700
1.999	6.860	.22440	-.10330	-.24230	.07690	-.03630	.16360	.00640	.03010	.04040	.00000
1.999	9.130	.22340	-.10830	-.34830	.11530	-.05410	.16780	.00690	.03260	.04260	.00000
1.999	11.130	.22160	-.11060	-.45140	.15090	-.06860	.16320	.00740	.03320	.04450	.00000
1.999	.410	.22170	-.10370	.00270	.00000	-.00170	.16260	.00620	.02470	.07480	.00000
GRADIENT		-.00041	.00070	-.03619	.01216	-.00367	-.00010	.00001	.00003	-.00004	.00000

RUN NO. 7/ 0 RWL = 4.97 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	ON	CLM	CY	CYN	CEL	CAF	CBO	CABO	CABT	CARS
4.999	-7.780	.10840	-.02710	.21270	-.07080	.03230	.15940	.00130	.00600	.00590	.00000
4.999	-5.650	.09400	-.01910	.15230	-.04980	.02390	.15550	.00130	.00620	.00590	.00000
4.999	-3.610	.08350	-.01600	.09610	-.03070	.01530	.15440	.00060	.00310	.00390	.00000
4.999	-1.600	.06410	-.01140	.04190	-.01290	.00670	.15100	.00120	.00390	.00590	.00000
4.999	.450	.07660	-.00610	-.01500	.00380	-.00260	.15020	.00130	.00680	.00590	.00000
4.999	2.400	.06150	-.01030	-.06940	.02140	-.01030	.14940	.00130	.00630	.00610	.00000
4.999	4.330	.05790	-.01390	-.12200	.03790	-.01910	.14240	.00130	.00620	.00600	.00000
4.999	6.360	.05610	-.01690	-.17640	.05370	-.02730	.15470	.00140	.00660	.00600	.00000
4.999	8.390	.10620	-.02790	-.24240	.07750	-.03690	.15710	.00140	.00680	.00600	.00000
4.999	.420	.07660	-.00900	-.01300	.00340	-.00240	.15190	.00140	.00660	.00620	.00000
GRADIENT		-.00002	.00010	-.02669	.00951	-.00420	-.00021	.00003	.00014	.00002	.00000

EXAMINATED SOURCE DATA: HSPC 579-580 (1A-37, 1A46)

1997 579 (1A57) 1034 (T9) (912)

PARASITIC DAYA

BETA = .000 ORBINC = .000
DELTAZ = 30.000

REFERENCE DATA

2007	=	0.1000 IN.	3000	=	2.7500 IN.
1007	=	0.1000 IN.	1000	=	.0000 IN.
0007	=	0.1000 IN.	2000	=	.0000 IN.
SCALE	=	.0040			

RUN NO. 46/ 0 VAL = 4.95 GRADIENT INTERVAL = -7.00/ 7.00

BRANCH	ALPHA	ON	CLM	CY	CTN	CHL	CAF	CHBO	CASO	CART	CASS
.599	-0.379	-0.6790	.23700	.21160	.00330	-.00180	.07130	.02740	.03460	.08360	.04560
.599	-7.410	-9.0190	.21470	.00960	.00190	-.00170	.08640	.02700	.03330	.08080	.04710
.599	-5.360	-3.0910	.19630	.00730	.00330	-.00140	.06640	.00710	.03360	.07700	.04690
.599	-8.290	-6.6620	.12900	.00960	.00360	-.00160	.02930	.00710	.03390	.06910	.04510
.599	-1.220	-0.6170	.06170	.003670	.00360	-.00110	.06410	.10700	.03320	.08650	.04430
.599	.690	-.02960	.04340	.00960	.00370	-.00040	.06930	.00680	.03360	.06400	.04180
.599	2.830	.09660	.02660	.00360	.00370	-.00100	.06720	.01710	.03390	.06800	.04220
.599	5.000	.18060	-.03330	.00360	.00760	.00210	.08210	.01360	.03200	.06880	.04120
.599	7.080	.30020	-.06360	.00160	.00460	-.00040	.08260	.00710	.03360	.07260	.04170
.599	9.140	.42700	-.13770	.00810	.00410	-.00040	.02960	.00680	.03360	.06640	.04530
.599	11.060	-.54450	-.16890	.00230	.00160	-.00020	.03130	.00710	.03390	.05960	.04690
.599	.690	-.09850	.04470	.00170	.00360	-.00130	.08410	.00680	.03600	.06800	.04240
.599	.029510	-.01967	-.01967	-.00109	.00360	.00212	-.00054	-.00002	-.00013	.00078	-.00032

LINE NO.	45/ 0	RWL = 6.21	GRADIENT INTERVAL = -7.00/ 7.00
1	0.00	0.00	0.00
2	0.00	0.00	0.00
3	0.00	0.00	0.00
4	0.00	0.00	0.00
5	0.00	0.00	0.00
6	0.00	0.00	0.00
7	0.00	0.00	0.00
8	0.00	0.00	0.00
9	0.00	0.00	0.00
10	0.00	0.00	0.00
11	0.00	0.00	0.00
12	0.00	0.00	0.00
13	0.00	0.00	0.00
14	0.00	0.00	0.00
15	0.00	0.00	0.00
16	0.00	0.00	0.00
17	0.00	0.00	0.00
18	0.00	0.00	0.00
19	0.00	0.00	0.00
20	0.00	0.00	0.00
21	0.00	0.00	0.00
22	0.00	0.00	0.00
23	0.00	0.00	0.00
24	0.00	0.00	0.00
25	0.00	0.00	0.00
26	0.00	0.00	0.00
27	0.00	0.00	0.00
28	0.00	0.00	0.00
29	0.00	0.00	0.00
30	0.00	0.00	0.00
31	0.00	0.00	0.00
32	0.00	0.00	0.00
33	0.00	0.00	0.00
34	0.00	0.00	0.00
35	0.00	0.00	0.00
36	0.00	0.00	0.00
37	0.00	0.00	0.00
38	0.00	0.00	0.00
39	0.00	0.00	0.00
40	0.00	0.00	0.00
41	0.00	0.00	0.00
42	0.00	0.00	0.00
43	0.00	0.00	0.00
44	0.00	0.00	0.00
45	0.00	0.00	0.00
46	0.00	0.00	0.00
47	0.00	0.00	0.00
48	0.00	0.00	0.00
49	0.00	0.00	0.00
50	0.00	0.00	0.00
51	0.00	0.00	0.00
52	0.00	0.00	0.00
53	0.00	0.00	0.00
54	0.00	0.00	0.00
55	0.00	0.00	0.00
56	0.00	0.00	0.00
57	0.00	0.00	0.00
58	0.00	0.00	0.00
59	0.00	0.00	0.00
60	0.00	0.00	0.00
61	0.00	0.00	0.00
62	0.00	0.00	0.00
63	0.00	0.00	0.00
64	0.00	0.00	0.00
65	0.00	0.00	0.00
66	0.00	0.00	0.00
67	0.00	0.00	0.00
68	0.00	0.00	0.00
69	0.00	0.00	0.00
70	0.00	0.00	0.00
71	0.00	0.00	0.00
72	0.00	0.00	0.00
73	0.00	0.00	0.00
74	0.00	0.00	0.00
75	0.00	0.00	0.00
76	0.00	0.00	0.00
77	0.00	0.00	0.00
78	0.00	0.00	0.00
79	0.00	0.00	0.00
80	0.00	0.00	0.00
81	0.00	0.00	0.00
82	0.00	0.00	0.00
83	0.00	0.00	0.00
84	0.00	0.00	0.00
85	0.00	0.00	0.00
86	0.00	0.00	0.00
87	0.00	0.00	0.00
88	0.00	0.00	0.00
89	0.00	0.00	0.00
90	0.00		

NAME	ALPHA	ON	CLM	CY	CTN	CEL	CAF	QSO	CBO	CABT	CABS
.0001	-9.880	-0.99710	-27353	-00230	-00440	-00180	-11080	-00810	-03850	-08410	-05070
.0002	-7.920	-0.83680	-82340	-00430	-00910	-00160	-11400	-00820	-03970	-08470	-05060
.0003	-9.480	-0.40000	-17983	-00480	-00880	-00110	-00460	-00780	-08700	-08480	-04940
.0004	-9.340	-0.27660	-12970	-00270	-00830	-00130	-12370	-00770	-03880	-08340	-04940
.0005	-1.480	-0.07980	-07980	-00250	-00770	-00210	-12140	-00740	-03510	-08480	-04360
.0006	-0.870	-0.03070	-03070	-00310	-00770	-00130	-11960	-00730	-03470	-08210	-04300
.0007	3.000	-0.00910	-00910	-00130	-00490	-00080	-11600	-00730	-03460	-08240	-04340
.0008	9.180	-0.22740	-00690	-00330	-00550	-00050	-11600	-00750	-03530	-08370	-04360
.0009	7.840	-0.11480	-01480	-00450	-00880	-00090	-11490	-00790	-03340	-08080	-04560
.0010	9.370	-0.49680	-13468	-00420	-00980	-00140	-11230	-00780	-03580	-07860	-04890
.0011	11.230	-0.90380	-11880	-00300	-00480	-00140	-10830	-00770	-03630	-07030	-04790
.0012	-0.880	-0.01680	-01680	-00480	-00780	-00190	-12680	-00750	-03530	-08270	-04210
.0013	0.0001567	-0.00219	-00219	-00048	-00012	-00004	-00059	-00004	-00019	-00014	-0.00049

00000077 (31 AUG 73)

WSPC 579 (IA37) K054 (79) (812)

PARAMETRIC DATA

BETA = .000 CRBINC = .000
DELTAZ = 30.000

REFERENCE DATA

WSPC = 0.1000 IN. WSPC = 2.7000 IN.
LWSP = 0.1000 IN. LWSP = .0000 IN.
WSPC = 0.1000 IN. WSPC = .0000 IN.
SCALE = .0040

NUM NO. 44/ 0 RWL = 0.97 GRADIENT INTERVAL = -7.00/ 7.00

WSPC	ALPHA	CH	CLM	CY	CYN	CEL	CAF	QBO	CBO	CABT	CAB
1.104	-9.780	-71.880	.00000	.00000	.00000	-.00000	.22310	.00000	.04040	.00000	.07000
1.104	-7.730	-59.880	.00000	.00000	.00000	-.00000	.22340	.00000	.04040	.00000	.06700
1.104	-5.910	-41.980	.00000	.00000	.00000	-.00000	.22340	.00000	.04040	.00000	.06400
1.104	-3.380	-29.160	.00000	.00000	.00000	-.00000	.22340	.00000	.04040	.00000	.06340
1.104	-1.250	-14.980	.00000	.00000	.00000	-.00000	.22340	.00000	.04040	.00000	.06210
1.104	.000	.000	.00000	.00000	.00000	-.00000	.22340	.00000	.04040	.00000	.06070
1.104	3.070	19.080	.00000	.00000	.00000	-.00000	.22740	.00000	.04040	.00000	.06100
1.104	5.880	38.280	.00000	.00000	.00000	-.00000	.22370	.00000	.04040	.00000	.06190
1.104	7.380	50.710	.00000	.00000	.00000	-.00000	.21670	.00000	.04040	.00000	.06340
1.104	8.880	58.070	.00000	.00000	.00000	-.00000	.20070	.00000	.04040	.00000	.06400
1.104	11.440	68.000	.00000	.00000	.00000	-.00000	.20110	.00000	.04040	.00000	.06510
1.104	.000	.000	.00000	.00000	.00000	-.00000	.20180	.00000	.04040	.00000	.06810
1.104	.000	.000	.00000	.00000	.00000	-.00000	-.00102	.00000	.00000	-.00000	-.00000

GRADIENT

NUM NO. 47/ 0 RWL = 0.45 GRADIENT INTERVAL = -7.00/ 7.00

WSPC	ALPHA	CH	CLM	CY	CYN	CEL	CAF	QBO	CBO	CABT	CAB
1.404	-9.780	-71.880	.00000	.00000	.00000	-.00000	.22310	.00000	.04040	.00000	.07000
1.404	-7.730	-59.880	.00000	.00000	.00000	-.00000	.22340	.00000	.04040	.00000	.06700
1.404	-5.910	-41.980	.00000	.00000	.00000	-.00000	.22340	.00000	.04040	.00000	.06400
1.404	-3.380	-29.160	.00000	.00000	.00000	-.00000	.22340	.00000	.04040	.00000	.06340
1.404	-1.250	-14.980	.00000	.00000	.00000	-.00000	.22340	.00000	.04040	.00000	.06210
1.404	.000	.000	.00000	.00000	.00000	-.00000	.22340	.00000	.04040	.00000	.06070
1.404	3.070	19.080	.00000	.00000	.00000	-.00000	.22740	.00000	.04040	.00000	.06100
1.404	5.880	38.280	.00000	.00000	.00000	-.00000	.22370	.00000	.04040	.00000	.06190
1.404	7.380	50.710	.00000	.00000	.00000	-.00000	.21670	.00000	.04040	.00000	.06340
1.404	8.880	58.070	.00000	.00000	.00000	-.00000	.20070	.00000	.04040	.00000	.06400
1.404	11.440	68.000	.00000	.00000	.00000	-.00000	.20110	.00000	.04040	.00000	.06510
1.404	.000	.000	.00000	.00000	.00000	-.00000	.20180	.00000	.04040	.00000	.06810
1.404	.000	.000	.00000	.00000	.00000	-.00000	-.00102	.00000	.00000	-.00000	-.00000

GRADIENT

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TABULATED SOURCE DATA, MFPC 579-380 (1A-37,1A48)

(2860077) (31 AUG 73)

MFPC 579 (1A37) (004) (79) (812)

REFERENCE DATA

REF = 0.1800 IN. 100P = 2.7500 IN.
 LREF = 9.1800 IN. 100P = 0.0000 IN.
 REF = 9.1800 IN. 200P = 0.0000 IN.
 SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORIGIN = .000
 DELTA Z = 50.000

RUN NO. 50/ 0 RVAL = 7.00 GRADIENT INTERVAL = -7.00/ 7.00

NOCH	ALPHA	CN	CLN	CY	CYN	CEL	CAF	CBO	CABT	CABS
1.999	-9.880	-8.750	.22540	.00010	.00530	-.00160	.26130	.00580	.04670	.02900
1.999	-7.800	-7.800	.17210	.00110	.00260	-.00170	.25980	.00580	.04580	.02870
1.999	-5.600	-5.600	.12480	.00100	.00250	-.00140	.25980	.00580	.04410	.02790
1.999	-3.450	-3.450	.08250	.00190	.00160	-.00210	.25440	.00580	.04310	.02770
1.999	-1.280	-1.280	.04170	.00010	.00530	-.00210	.25060	.00580	.03900	.02760
1.999	.000	.000	-.00400	.00170	.00530	-.00250	.25150	.00580	.03570	.02670
1.999	3.080	3.080	-.00640	.00130	.00260	-.00250	.24870	.00580	.03590	.02530
1.999	5.210	5.210	-.10960	.00410	.00250	-.00180	.24850	.00580	.03540	.02540
1.999	7.380	7.380	-.15430	.00400	.00130	-.00130	.24310	.00580	.03480	.02390
1.999	9.560	9.560	-.19540	.00330	.00260	-.00130	.24280	.00580	.03390	.02420
1.999	11.740	11.740	-.23030	.00260	.00530	-.00100	.24420	.00580	.03470	.02550
1.999	.000	.000	-.00170	.00050	.00010	-.00002	-.00059	.00003	-.00002	-.00040
1.999	.000	.000	-.00134	.00007	.00010	-.00002	-.00059	.00003	-.00002	-.00040

GRADIENT

RUN NO. 60/ 0 RVAL = 9.00 GRADIENT INTERVAL = -7.00/ 7.00

NOCH	ALPHA	CN	CLN	CY	CYN	CEL	CAF	CBO	CABT	CABS
4.999	-9.210	-9.210	.14460	.00480	-.00080	.00260	.25040	.00080	.00880	.00570
4.999	-7.280	-7.280	.12210	.00330	-.00100	.00260	.24010	.00080	.00880	.00560
4.999	-5.210	-5.210	.10430	.00260	-.00110	-.00020	.23530	.00080	.00880	.00570
4.999	-3.200	-3.200	.08330	.00260	-.00130	-.00040	.23150	.00080	.00880	.00540
4.999	-1.180	-1.180	.06440	.00260	.00000	.00000	.20770	.00100	.00880	.00510
4.999	.000	.000	-.04650	.00260	.00060	.00010	.20070	.00100	.00880	.00490
4.999	2.910	2.910	.02780	.00260	.00000	-.00040	.19400	.00100	.00880	.00470
4.999	4.880	4.880	.00180	.00260	.00030	-.00010	.18790	.00100	.00880	.00480
4.999	6.970	6.970	-.02330	.00130	.00030	-.00050	.18110	.00100	.00880	.00450
4.999	9.020	9.020	-.02500	.00130	.00020	-.00040	.17590	.00100	.00880	.00460
4.999	10.960	10.960	-.07960	.00150	.00030	-.00110	.17100	.00100	.00880	.00490
4.999	.000	.000	.04680	.00260	.00060	-.00010	.20020	.00100	.00880	.00490
4.999	.000	.000	-.01022	-.00027	.00017	-.00000	-.00053	.00001	-.00003	-.00010

WSPC 579 (1A37) (034) (79) (812)

(088008) (31 AUG 73)

DEPENDENT DATA

WSP = 6.1800 IN. WSP = 2.7800 IN.
 WSP = 5.1600 IN. WSP = .0000 IN.
 WSP = 5.1600 IN. WSP = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = .000 ORBITAL = .000
 DELTA Z = 30.000

RUN NO. 42/ 0 RVAL = 4.86 GRADIENT INTERVAL = -7.00/ 7.00

WSP	BETA	CM	CLM	CY	CYN	CEL	CAF	CRD	CABO	CART	CABE
.898	.400	-.07600	.04880	.00960	.00000	.00100	.00040	.00710	.00370	.00740	.04300
.897	-.8.960	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.896	-.7.940	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.895	-.7.910	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.894	-.6.780	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.893	-.5.700	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.892	-.4.630	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.891	-.3.560	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.890	-.2.490	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.889	-.1.420	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.888	.4.500	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.887	6.570	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.886	8.650	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.885	10.470	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.884	GRADIENT	-.00000	.00000	-.03741	.01725	-.00000	.00126	-.00000	.00000	-.00017	-.00004

RUN NO. 41/ 0 RVAL = 6.19 GRADIENT INTERVAL = -7.00/ 7.00

WSP	BETA	CM	CLM	CY	CYN	CEL	CAF	CRD	CABO	CART	CABE
.898	.400	-.07600	.04880	.00960	.00000	.00100	.00040	.00710	.00370	.00740	.04300
.897	-.8.960	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.896	-.7.940	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.895	-.7.910	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.894	-.6.780	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.893	-.5.700	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.892	-.4.630	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.891	-.3.560	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.890	-.2.490	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.889	-.1.420	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.888	.4.500	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.887	6.570	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.886	8.650	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.885	10.470	-.04150	.02180	.37240	-.19000	.05780	.00760	.00970	.04100	.00000	.05000
.884	GRADIENT	-.00000	.00000	-.04302	.02116	-.00712	.00116	-.00000	-.00000	.00002	-.00007

TABULATED SOURCE DATA, H87C ST9-500 (1A-37,1A48)

0000006 (31 AUG 75)

H87C ST9 (1A37) 0004 (79) (812)

PARAMETRIC DATA

ALPHA = .000
 DELTA Z = 30.000
 CRSSINC = .030

REFERENCE DATA

SIZE = 6.1000 IN. YSEP = 2.7000 IN.
 LSEP = 5.1000 IN. YSEP = .0000 IN.
 WSEP = 5.1000 IN. ZSEP = .0000 IN.
 SCALE = .0040

RUN NO. 48/ 0 REV. = 7.02 GRADIENT INTERVAL = -7.00/ 7.00

WCH	BETA	CH	CLN	CY	CYN	CEL	CAF	CBO	CBO	CABT	CABS
1.847	-10.280	-.00370	-.00100	.40780	-.11840	.04480	.84980	.00880	.03600	.04170	.02150
1.847	-8.180	-.00180	-.00250	.36870	-.11070	.04980	.24750	.00880	.03120	.00880	.02230
1.847	-6.010	-.00270	-.00100	.29810	-.11060	.05840	.25880	.00840	.03050	.03740	.02380
1.847	-3.880	-.00480	.00130	.17470	-.07230	.02150	.23950	.00820	.02780	.03790	.02820
1.847	-1.740	-.01870	.00820	.08280	-.03410	.00970	.23560	.00810	.02670	.04070	.02740
1.847	.410	-.01150	.00880	-.00230	.00330	-.00240	.23930	.00800	.02680	.03680	.02980
1.847	2.590	-.00370	.00670	-.00860	.04030	-.01340	.23880	.00810	.02680	.03700	.02810
1.847	4.880	.00240	.00200	-.17480	.07730	-.02330	.24170	.00800	.02620	.03770	.02440
1.847	6.840	.00360	-.00310	-.27250	.11730	-.02950	.26720	.00800	.03080	.03980	.02350
1.847	9.040	.00430	-.00220	-.37610	.16130	-.03680	.26880	.00800	.03130	.04210	.02360
1.847	11.080	.00480	-.00140	-.46340	.20470	-.07010	.26630	.00800	.03270	.04270	.02370
1.847	.410	-.01480	.00910	-.00300	.00380	-.00300	.25180	.00800	.03630	.03710	.02430
GRADIENT		.00070	.00004	-.04147	.01763	-.00870	.00047	.00004	.00002	.00003	-.00017

RUN NO. 50/ 0 REV. = 4.97 GRADIENT INTERVAL = -7.00/ 7.00

WCH	BETA	CH	CLN	CY	CYN	CEL	CAF	CBO	CBO	CABT	CABS
4.889	-9.880	-.00700	.04470	.31440	-.11480	.03970	.22130	.00380	.00480	.00880	.00380
4.889	-7.770	-.00180	.04880	.24230	-.08880	.02880	.21810	.00380	.00480	.00880	.00340
4.889	-5.670	-.00880	.04980	.18040	-.04980	.00980	.20950	.00380	.00430	.00630	.00400
4.889	-3.620	-.00370	.04680	.11620	-.04190	.01230	.20810	.00380	.00480	.00680	.00440
4.889	-1.620	-.00080	.04800	.05830	-.01910	.00580	.20240	.00380	.00430	.00640	.00480
4.889	.410	-.00150	.03800	.00020	.00230	-.00340	.20280	.00380	.00480	.00630	.00510
4.889	2.470	-.00870	.04780	-.08170	.02360	-.00830	.20250	.00100	.00490	.00630	.00510
4.889	4.480	-.00360	.05030	-.12340	.04810	-.01380	.20340	.00100	.00500	.00680	.00500
4.889	6.540	-.00730	.04770	-.16970	.07070	-.02410	.20360	.00110	.00500	.00680	.00490
4.889	8.580	-.00160	.04720	-.22570	.03980	-.03330	.22970	-.00170	.00430	.00680	.00480
4.889	10.480	-.00880	.06130	-.32160	.12130	-.04220	.22170	.00090	.00430	.00680	.00310
4.889	.410	-.00880	.08230	.00230	.00160	.00160	.20300	.00080	.00410	.00650	.00450
GRADIENT		.00011	.00016	-.00000	.01108	-.00039	-.00001	.00002	.00006	.00002	.00006

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TABULATED SOURCE DATA, NSPC 579-560 (IA-37,1A48)

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NSPC 579 (1A37) (034) (714) (312) (UN)

(038009) (28 AUG 73)

REFERENCE DATA

0007 = 0.1900 IN. 1000 = 2.7800 IN.
 0008 = 5.1000 IN. 1000 = .0000 IN.
 0009 = 5.1000 IN. 2000 = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

BETA = .000 CRBINC = .000
 DELTAZ = 30.000

RUN NO. 26/ 0 RVL = 5.01 GRADIENT INTERVAL = -7.00/ 7.00

ALPHA	CN	CLM	CY	CYN	CEL	CAF	CEO	CBO	CABT	CABS
.907	-9.560	.21260	.01680	-.00480	.00170	.11210	.00750	.03560	.08080	.04880
.907	-7.400	.17480	.01680	-.00480	.00150	.11680	.00760	.03580	.07670	.04880
.907	-5.320	.13310	.01430	-.00380	.00130	.12300	.00750	.03480	.07430	.04910
.907	-3.280	.08670	.01190	-.00210	.00090	.12470	.00740	.03480	.07380	.04880
.907	-1.200	.05750	.00960	-.00110	.00060	.12470	.00720	.03480	.07380	.04880
.907	.980	.02080	.01140	-.00120	.00010	.12500	.00720	.03410	.07340	.04290
.907	2.930	.00250	.00880	.00110	-.00120	.11600	.00680	.03290	.07250	.04250
.907	5.000	.00080	.00530	.00130	-.00140	.10730	.00680	.03210	.07100	.04210
.907	7.080	.00000	.00270	.00090	-.00200	.09440	.00670	.03170	.07040	.04260
.907	9.140	.00000	.00080	.00070	-.00160	.08330	.00680	.03230	.06970	.04460
.907	11.000	.00000	.00000	.00070	-.00240	.08040	.00680	.03220	.06700	.04330
.907	.980	.00000	.00000	.00050	-.00250	.12300	.00680	.03240	.07140	.04210
.907	.980	.00000	.00000	.00046	-.00250	.00150	-.00006	-.00026	-.00031	-.00033
.907	.05337	-.01774	-.00083	.00046	-.00006	-.00150	-.00006	-.00026	-.00031	-.00033

GRADIENT

RUN NO. 27/ 0 RVL = 5.99 GRADIENT INTERVAL = -7.00/ 7.00

ALPHA	CN	CLM	CY	CYN	CEL	CAF	CEO	CBO	CABT	CABS
.805	-9.560	.21260	.01680	-.00480	.00070	.13180	.00740	.03480	.08330	.04580
.805	-7.400	.16880	.01680	-.00380	.00030	.13670	.00750	.03570	.08160	.04590
.805	-5.340	.12410	.01480	-.00280	-.00010	.14110	.00720	.03410	.07750	.04380
.805	-3.340	.08250	.01510	.00000	-.00080	.13750	.00750	.03480	.07780	.04470
.805	-1.250	.04830	.01280	.00130	-.00080	.14040	.00750	.03490	.07580	.04800
.805	.970	.03000	.01410	.00130	-.00110	.13780	.00750	.03430	.07680	.04130
.805	2.960	.02220	.01370	.00280	-.00140	.13410	.00720	.03380	.07380	.03980
.805	5.080	.00160	.01210	.00150	-.00220	.12590	.00720	.03430	.07370	.04080
.805	7.180	.00000	.01200	.00110	-.00220	.12310	.00730	.03460	.07370	.04250
.805	9.290	.00000	.01080	.00070	-.00210	.12300	.00740	.03480	.07410	.04310
.805	11.170	.00000	.00400	-.00160	-.00310	.11980	.00750	.03490	.07410	.04540
.805	.980	.00000	.00410	-.00110	-.00360	.13800	.00730	.03490	.07770	.04160
.805	.05827	-.01942	-.00009	.00010	-.00021	-.00085	-.00001	-.00003	-.00031	-.00039

GRADIENT

MSFC 579 (1A37) 0054 (714) (512) (US)

0000009 (31 AUG 73)

REFERENCE DATA

WREF = 6.1800 IN. 100P = 2.7500 IN.
 LREF = 5.1800 IN. 100P = .0000 IN.
 BREF = 5.1800 IN. ZREF = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORBINC = .000
 DELTAZ = 50.000

RUN NO. 25/ 0 RWL = 6.33 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	CH	CLM	CY	CYN	CEL	CAF	CSO	CBO	CABT	CABS
.000	-9.800	.00000	.00000	-.00760	.00040	-.00100	.14830	.00000	.00000	.00010	.04750
.005	-7.980	-.48860	.17040	-.00480	.00680	-.00120	.13360	.00760	.03700	.00000	.04670
.010	-5.440	-.33410	.18780	.00020	.00440	-.00080	.10080	.00760	.03610	.00010	.04580
.015	-3.340	-.21330	.07880	-.00480	.00570	-.00160	.13750	.00770	.03450	.00000	.04380
.020	-1.240	-.09160	.06640	-.00020	.00730	-.00240	.15640	.00760	.03560	.00170	.04220
.025	.000	.04820	-.03120	-.00480	.00630	-.00210	.19930	.00770	.03430	.00790	.04310
.030	3.010	.16330	-.07040	-.00430	.00680	-.00280	.15660	.00770	.03630	.07980	.04200
.035	5.130	.27540	-.10040	-.00480	.00470	-.00280	.13340	.00760	.03620	.07760	.04300
.040	7.240	.39090	-.15360	.00160	.00160	-.00300	.14410	.00810	.03800	.07900	.04460
.045	9.350	.49780	-.19080	-.00090	.00160	-.00240	.13750	.00810	.03850	.07910	.04500
.050	11.270	.60130	-.22800	-.00310	-.00140	-.00250	.13670	.00780	.03700	.07830	.04710
.055	.000	.04040	-.05040	-.00420	.00000	-.00220	.19900	.00770	.03920	.07750	.04260
GRADIENT	.02804	-.02186	-.00028	-.00028	.00012	-.00016	-.00045	.00000	.00001	-.00051	-.00027

RUN NO. 25/ 0 RWL = 6.54 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	CH	CLM	CY	CYN	CEL	CAF	CSO	CBO	CABT	CABS
1.001	-9.678	-.63810	.25400	.00030	.00000	.00000	.23140	.01150	.05450	.10970	.09760
1.002	-7.610	-.58880	.25400	.00010	.00000	-.00050	.23480	.01120	.05300	.10870	.09670
1.003	-5.450	-.39650	.17710	.00050	.00760	-.00050	.24130	.01080	.05140	.10510	.06390
1.004	-3.340	-.25010	.18080	.00080	.00000	-.00080	.24150	.01070	.05070	.10140	.08290
1.005	-1.210	-.11440	.08270	-.00350	.01010	-.00150	.25900	.01080	.05080	.10180	.04300
1.006	.000	.03760	-.00670	-.00000	.00940	-.00250	.25270	.01080	.05110	.10180	.06330
1.007	3.050	.17620	-.07340	-.00070	.00700	-.00220	.22550	.01080	.05190	.09610	.04340
1.008	5.170	.29430	-.11810	-.00030	.00700	-.00180	.22470	.01080	.05100	.09630	.06470
1.009	7.290	.41360	-.16170	.00750	.00180	-.00150	.21080	.01080	.05160	.09470	.06310
1.010	9.440	.52760	-.19990	.00900	-.00060	-.00140	.20000	.01080	.05120	.09450	.06720
1.011	11.340	.61940	-.23380	.01080	-.00080	-.00000	.20830	.01080	.05120	.09310	.06310
1.012	.000	.03770	-.02850	-.00000	.00980	-.00220	.22980	.01080	.05130	.10300	.06310
GRADIENT	.04018	.04005	-.03888	-.00008	-.00010	-.00016	-.00163	.00000	.00001	-.00058	.00008

TAB LATED SOURCE DATA, MFC 579-360 (1A-37, 1A40)

GRAC0009 (31 AUG 73)

MFC 579 (1A37) (054) (1A4) (812) (06)

PARAMETRIC DATA

BETA " .000 ORBINC = .000
DELTAZ = 30.000

REFERENCE DATA

REF = 6.1000 IN. WARP = 2.7000 IN.
LREF = 5.1000 IN. WARP = .0000 IN.
REF = 5.1000 IN. WARP = .0000 IN.
SCALE = .0040

RUN NO. 24/ 0 RVAL = 6.71 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CLL	CAF	CMO	CMS	CMT	CABL
1.101	-9.190	-8.400	.23190	.00220	.00450	.00350	.26980	.01010	.04790	.08440	.00300
1.101	-7.490	-7.490	.19270	.00340	.00370	.00250	.27150	.00860	.04650	.08310	.00240
1.101	-5.480	-3.400	.14580	.00350	.00110	.00050	.27110	.00980	.04540	.08450	.00170
1.101	-3.370	-2.300	.10200	.00360	.00100	.00050	.17240	.00950	.04460	.08250	.00090
1.101	-1.250	-1.000	.06280	.02470	.00070	.00050	.27280	.00940	.04460	.08030	.00000
1.101	.840	.03000	.02850	.00430	.00430	.00170	.26920	.00940	.04440	.08060	.00000
1.101	3.070	.37000	.08810	.00340	.00640	.00140	.25980	.00960	.04330	.08090	.00000
1.101	1.210	.30040	.11450	.00250	.00810	.00100	.25360	.00980	.04580	.08710	.00000
1.101	7.330	.41740	.10510	.00110	.00720	.00050	.24870	.00980	.04530	.08480	.00000
1.101	9.480	.26330	.19530	.00080	.00650	.00050	.23210	.00970	.04580	.08450	.00000
1.101	11.410	.01970	.22570	.00020	.00600	.00050	.22680	.00950	.04530	.08290	.00000
1.101	.990	.08250	.00560	.00000	.00600	.00180	.26470	.00960	.04540	.08180	.00000
1.101	.08250	.08250	.00498	.00000	.00056	.00056	.00174	.00000	.00001	.00063	.00007

RUN NO. 25/ 0 RVAL = 6.72 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CLL	CAF	CMO	CMS	CMT	CABL
1.101	-9.800	-8.130	.21380	.00110	.00330	.00080	.27330	.00540	.04440	.08020	.00790
1.101	-7.780	-5.520	.14740	.00080	.00410	.00010	.27780	.00860	.04360	.08740	.00630
1.101	-5.560	.25000	.08560	.00080	.00390	.00010	.28250	.00860	.04230	.08410	.00780
1.101	-3.370	.18140	.06800	.00050	.00350	.00050	.28240	.00800	.04270	.08680	.00410
1.101	-1.220	.03000	.00950	.00180	.00430	.00150	.28440	.00800	.04190	.08380	.00350
1.101	.840	.10480	.05750	.00100	.00310	.00170	.27210	.00800	.04240	.08680	.00360
1.101	3.100	.22770	.10690	.00040	.00400	.00220	.26730	.00820	.04330	.08300	.00370
1.101	5.220	.34910	.15050	.00040	.00180	.00210	.25830	.00940	.04430	.08140	.00180
1.101	7.370	.45980	.19870	.00030	.00190	.00190	.24940	.00940	.04540	.08030	.00230
1.101	9.540	.56530	.22050	.00090	.00190	.00180	.24110	.01000	.04700	.08130	.00230
1.101	11.500	.66290	.24360	.00050	.00110	.00130	.23280	.00890	.04210	.08600	.00560
1.101	.940	.10350	.06680	.00100	.00260	.00170	.26260	.00890	.04210	.08600	.00001
1.101	.08250	.08250	.00221	.00001	.00027	.00012	.00115	.00004	.00016	.00019	.00001

GRADIENT

579 (1A37) 103-4) (714) (812) (10)

(31 AUG 73) (00000000)

REFERENCE DATA

1987	=	6.1600	24. IN.	1987	=	2.1820	24.
1987	=	3.1650	24.	1987	=	.0000	24.
1987	=	3.1650	24.	1987	=	.0000	24.
1987	=	.6040					

PARAMETRIC DATA

067A = .000 089INC = .000
067AZ = 30.070

RES ID. 22/0 MWL = 0.12 GRADIENT INTERVAL = -7.00/ 7.00

NAME	ALPHA	CH	CLJ1	CT	CYN	CEL	CAF	CBSO	CMSO	CMBT	CMB9
1-088	-9.088	-0.0880	-0.0879	-0.0840	-0.0450	-0.0080	-0.0040	-0.0110	-0.0060	-0.0069	-0.0170
1-089	-7.779	-0.0879	-0.0869	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-090	-8.980	-0.0870	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-091	-8.410	-0.0860	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-092	-1.820	-0.0850	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-093	-0.000	-0.0840	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-094	3.080	-0.0830	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-095	5.280	-0.0820	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-096	7.380	-0.0810	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-097	9.470	-0.0800	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-098	11.560	-0.0790	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-099	13.650	-0.0780	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-100	15.740	-0.0770	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-101	17.830	-0.0760	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-102	19.920	-0.0750	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-103	22.010	-0.0740	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-104	24.100	-0.0730	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-105	26.190	-0.0720	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-106	28.280	-0.0710	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-107	30.370	-0.0700	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-108	32.460	-0.0690	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-109	34.550	-0.0680	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-110	36.640	-0.0670	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-111	38.730	-0.0660	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-112	40.820	-0.0650	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-113	42.910	-0.0640	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-114	45.000	-0.0630	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-115	47.090	-0.0620	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-116	49.180	-0.0610	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-117	51.270	-0.0600	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-118	53.360	-0.0590	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-119	55.450	-0.0580	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-120	57.540	-0.0570	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-121	59.630	-0.0560	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-122	61.720	-0.0550	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-123	63.810	-0.0540	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-124	65.900	-0.0530	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-125	67.990	-0.0520	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-126	70.080	-0.0510	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-127	72.170	-0.0500	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-128	74.260	-0.0490	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-129	76.350	-0.0480	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-130	78.440	-0.0470	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-131	80.530	-0.0460	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-132	82.620	-0.0450	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-133	84.710	-0.0440	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-134	86.800	-0.0430	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-135	88.890	-0.0420	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-136	90.980	-0.0410	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-137	93.070	-0.0400	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-138	95.160	-0.0390	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-139	97.250	-0.0380	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-140	99.340	-0.0370	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-141	101.430	-0.0360	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-142	103.520	-0.0350	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-143	105.610	-0.0340	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-144	107.700	-0.0330	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-145	109.790	-0.0320	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-146	111.880	-0.0310	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-147	113.970	-0.0300	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-148	116.060	-0.0290	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-149	118.150	-0.0280	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-150	120.240	-0.0270	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-151	122.330	-0.0260	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-152	124.420	-0.0250	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-153	126.510	-0.0240	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-154	128.600	-0.0230	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-155	130.690	-0.0220	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-156	132.780	-0.0210	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-157	134.870	-0.0200	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-158	136.960	-0.0190	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-159	139.050	-0.0180	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-160	141.140	-0.0170	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-161	143.230	-0.0160	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-162	145.320	-0.0150	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-163	147.410	-0.0140	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-164	149.500	-0.0130	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-165	151.590	-0.0120	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-166	153.680	-0.0110	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-167	155.770	-0.0100	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-168	157.860	-0.0090	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-169	159.950	-0.0080	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-170	162.040	-0.0070	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-171	164.130	-0.0060	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-172	166.220	-0.0050	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-173	168.310	-0.0040	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-174	170.400	-0.0030	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-175	172.490	-0.0020	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-176	174.580	-0.0010	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-177	176.670	0.0000	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	-0.0060
1-178	178.760	0.0010	-0.0870	-0.0840	-0.0450	-0.0080	-0.0040	-0.0080	-0.0060	-0.0069	

ITEM NO. 15 D RUL = 0.91 GRADIENT INTERVAL = -7.00/ 7.00

PARAM	ALPHA	ON	CLX	CV	CTW	CEL	CAT	CNEO	CASO	CASL	CASE
1.000	-0.870	-2.9825	1.9400	-0.0018	0.0450	0.0060	8.8600	0.0850	0.0210	0.0410	0.0070
1.000	-7.780	-0.6070	1.4160	0.0080	0.0230	0.0000	2.8040	0.0080	0.0210	0.0480	0.0130
1.000	-9.600	-1.3140	0.9150	0.0190	0.0240	0.0010	2.8080	0.0080	0.0240	0.0430	0.0000
1.000	-3.400	-1.9820	0.4980	0.0250	0.0180	-0.0010	2.8910	0.0010	0.0430	0.0410	0.0030
1.000	-1.500	-0.7715	0.0850	0.0270	0.0160	-0.0000	2.6180	0.0010	0.0440	0.0280	0.0060
1.000	0.900	0.6810	-0.4870	0.0040	0.0110	-0.0010	2.7680	0.0010	0.0430	0.0260	0.0080
1.000	3.000	1.9040	-0.0630	0.0190	0.0170	-0.0010	2.6010	0.0030	0.0210	0.0360	0.0290
1.000	5.200	3.0030	-1.1310	0.0080	0.0080	-0.0010	2.8120	0.0030	0.0240	0.0460	0.0260
1.000	7.300	4.2140	-1.7110	0.0030	0.0170	-0.0010	2.6360	0.0040	0.0250	0.0390	0.0260
1.000	9.800	5.9480	-2.0510	0.0150	0.0150	-0.0020	2.7430	0.0050	0.0260	0.0360	0.0270
1.000	11.570	6.6160	-2.2470	0.0160	0.0160	-0.0020	2.7110	0.0060	0.0260	0.0390	0.0260
1.000	0.900	0.6810	-0.4060	0.0070	0.0170	-0.0000	2.7620	0.0010	0.0240	0.0360	0.0290
SEASIDE	0.0012	0.0001	0.0001	0.0001	0.0001	-0.0001	-0.0001	0.0001	0.0001	-0.0001	-0.0001

(31 AUG 73)

NPFC 578 (IA37) (054) (T14) (S12) (UB)

REFERENCE DATA

REF = 8.1800 IN. WREF = 8.7830 IN.
 LREF = 8.1800 IN. YREF = .0000 IN.
 BREF = 8.1800 IN. ZREF = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = -5.000 CRBINC = .000
 DELTAZ = 30.000

RUN NO. 37/0 RVL = 4.05 GRADIENT INTERVAL = -7.00/ 7.00

POACH	BETA	ON	CLM	CY	CYN	CEL	CAP	CRBO	CASO	CABT	CABS
.899	-9.770	-2.7780	.08350	.36970	-.18080	.03310	.10500	.00800	.04270	.08460	.05980
.899	-7.770	-2.7750	.08310	.36390	-.13960	.04340	.10860	.00960	.04210	.08190	.05230
.899	-8.730	-2.7730	.08440	.34810	-.10970	.03450	.11290	.00890	.04080	.07960	.05030
.899	-8.700	-2.8060	.08940	.16330	-.07310	.02300	.12000	.00760	.03700	.07640	.04710
.899	-1.840	-2.8930	.10370	.07960	-.03630	.01140	.12080	.00760	.03680	.07530	.04680
.899	.480	-3.0320	.11480	-.00000	.00000	.00000	.12080	.00710	.03370	.07520	.04330
.899	2.470	-3.0480	.11750	-.08790	.04010	-.01180	.13320	.00700	.03300	.07370	.04380
.899	4.800	-3.0340	.11480	-.16420	.07430	-.02270	.13070	.00700	.03330	.06310	.04130
.899	6.960	-2.9650	.10710	-.24100	.10750	-.03360	.12540	.00760	.03680	.06310	.04160
.899	9.840	-2.9670	.10480	-.31680	.13610	-.04160	.12270	.00840	.03970	.06880	.04220
.899	10.500	-2.9600	.10940	-.36570	.16050	-.05020	.11910	.00920	.04330	.06820	.04650
.899	.410	-2.9090	.11870	.00210	.00000	.00000	.12810	.00730	.03460	.07400	.04000
.899	GRADIENT	-.00171	.00211	-.03682	.01798	-.00552	.00126	-.00008	-.00037	.00039	-.00069

RUN NO. 36/0 RVL = 8.19 GRADIENT INTERVAL = -7.00/ 7.00

POACH	BETA	ON	CLM	CY	CYN	CEL	CAP	CRBO	CASO	CABT	CABS
.899	-10.000	-2.7070	.07330	.46000	-.13440	.06330	.14030	.01020	.04650	.09340	.05750
.899	-9.010	-2.8850	.07160	.37430	-.16130	.03210	.14900	.01000	.04710	.08960	.05400
.899	-9.000	-2.8960	.07080	.28150	-.13920	.03630	.15840	.00840	.04450	.08540	.04910
.899	-5.790	-2.9760	.07370	.19180	-.08690	.02810	.16070	.00660	.04500	.08160	.04470
.899	-1.890	-2.7600	.09390	.09360	-.04480	.01400	.16440	.00680	.03670	.07970	.04150
.899	.410	-2.9680	.10540	-.00570	.00600	-.00110	.16250	.00760	.03600	.08240	.04440
.899	2.310	-2.9410	.10440	-.10940	.05960	-.01790	.16560	.00780	.03670	.08160	.04330
.899	4.360	-2.7500	.09500	-.19340	.09600	-.03050	.16790	.00800	.03780	.08160	.04400
.899	6.720	-2.7710	.08970	-.29060	.14010	-.04410	.16770	.00840	.03970	.08120	.04360
.899	8.830	-2.9160	.08630	-.36300	.17790	-.05590	.16680	.00940	.04410	.08450	.04360
.899	10.740	-2.9220	.08400	-.46040	.20220	-.06460	.16340	.00990	.04680	.09140	.04280
.899	.420	-2.9000	.10900	-.00770	.00620	-.00820	.16100	.00790	.03720	.08260	.04560
.899	GRADIENT	-.00166	.00185	-.04368	.02166	-.00679	.00083	-.00009	-.00043	-.00016	-.00029

TABULATED SOURCE DATA, HSPC 579-580 (IA-37,IA48)

HSPC 579 (IA37) 6254 (T14) (S12) (UN)

0806030 (31 AUG 75)

REFERENCE DATA

WAVE = 6.1900 IN. WAVE = 2.7200 IN.
 WAVE = 5.1600 IN. WAVE = .0000 IN.
 WAVE = 5.1600 IN. WAVE = .0000 IN.
 SCALE = .0040

ALPHA = -3.000 CRIBINC = .000
 DELTAZ = 30.000

PARAMETRIC DATA

RUN NO. 35/ 0 RVAL = 6.56 GRADIENT INTERVAL = -7.00/ 7.00

WAVE	BETA	ON	CLM	CY	CTN	CEL	CAF	QBO	CABO	CABT	CABS
1.000	-10.150	-25810	.10460	.50090	-.20350	.07620	.23560	.01150	.05430	.02760	.06950
1.000	-6.150	-25980	.12800	.40370	-.17560	.06370	.23170	.01110	.03260	.02990	.06820
1.000	-2.950	-25140	.10580	.30110	-.13600	.04780	.26800	.01070	.05070	.03290	.06810
1.000	-3.840	-25630	.11240	.20170	-.08370	.03180	.26950	.01010	.04770	.03110	.06430
1.000	-1.720	-20390	.12540	.09680	-.04600	.01600	.27360	.00990	.04700	.03030	.06200
1.000	.480	-31570	.13000	-.01290	.01080	-.00160	.27340	.00940	.04460	.02900	.06160
1.000	2.540	-31240	.12960	-.12100	.08250	-.01990	.27370	.00940	.04430	.02940	.06030
1.000	4.660	-31170	.12410	-.21950	.10870	-.03550	.29130	.00960	.04640	.03070	.05830
1.000	6.790	-31840	.12900	-.32110	.13770	-.05280	.27690	.01090	.05180	.03320	.05810
1.000	8.940	-32490	.13180	-.41740	.16130	-.06430	.27560	.01140	.05370	.03400	.05600
1.000	10.900	-32950	.13200	-.50750	.25070	-.07920	.27220	.01180	.05580	.03700	.05470
1.000	.360	-31690	.13220	-.01100	.01000	-.00280	.27190	.00940	.04320	.03940	.06150
1.000	GRADIENT	-.00196	.00167	-.04824	.02308	-.00791	.00110	-.00001	-.00004	.00004	-.00062

RUN NO. 20/ 0 RVAL = 6.25 GRADIENT INTERVAL = -7.00/ 7.00

WAVE	BETA	ON	CLM	CY	CTN	CEL	CAF	QBO	CABO	CABT	CABS
1.462	-10.250	-25460	.07500	.47730	-.19240	.06770	.29640	.00830	.03910	.02640	.05060
1.462	-6.170	-25690	.08940	.37530	-.15380	.05430	.29380	.00780	.03670	.02680	.04820
1.462	-2.940	-27120	.08800	.26820	-.11080	.03670	.29510	.00710	.03350	.02620	.04590
1.462	-3.830	-26240	.08340	.16790	-.06790	.02360	.29570	.00700	.03300	.02540	.04370
1.462	-1.710	-26950	.08600	.07210	-.02710	.00970	.29660	.00680	.03270	.02560	.04330
1.462	.440	-26860	.06560	-.02690	.01580	-.00400	.29650	.00660	.03130	.02480	.04340
1.462	2.570	-27580	.07040	-.12020	.05550	-.01900	.29630	.00690	.03290	.02480	.04250
1.462	4.780	-27650	.07080	-.21630	.08460	-.03290	.30120	.00750	.03460	.02630	.04170
1.462	6.900	-28500	.07240	-.31810	.13600	-.04790	.30180	.00780	.03670	.02730	.03950
1.462	9.100	-30300	.08450	-.42630	.17680	-.06330	.29930	.00810	.03820	.02700	.04000
1.462	11.070	-31350	.09200	-.53130	.21850	-.07640	.29430	.00830	.03940	.02250	.04110
1.462	.440	-26970	.06590	-.03100	.01770	-.00580	.29680	.00690	.03100	.02680	.04320
1.462	GRADIENT	-.00113	.00063	-.04532	.01911	-.00667	.00054	.00005	.00022	.00008	-.00050

MFC 579 (1A37) (3A4) (714) (812) (U8)

(080010) (31 AUG 73)

REFERENCE DATA

WWP = 6.1800 IN. YWP = 2.7600 IN.
 LWP = 5.1600 IN. YWP = .0000 IN.
 WWP = 5.1600 IN. ZWP = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = -5.000 ORBINC = .000
 DELTAZ = 30.000

RUN NO. 17/ 0 RV/L = 6.82 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAF	QNSO	CASO	CASL	CASB
1.970	-10.280	-28780	.08040	.48130	-.19480	.08240	.28080	.00640	.03080	.04960	.03080
1.970	-9.820	-28340	.08030	.37600	-.15120	.04800	.28330	.00580	.02780	.04800	.02000
1.970	-9.030	-28910	.08140	.26930	-.10750	.03430	.28630	.00560	.02650	.04430	.02980
1.970	-8.880	-28320	.08480	.16460	-.08360	.02140	.28130	.00540	.02550	.04630	.02920
1.970	-1.720	-28640	.08600	.07140	-.02380	.00880	.28460	.00510	.02400	.04440	.02840
1.970	.440	-28660	.08680	-.02360	.01300	-.00370	.28780	.00520	.02480	.04440	.02930
1.970	2.600	-28660	.08960	-.11970	.05160	-.01780	.28250	.00530	.02500	.04410	.02800
1.970	4.780	-29120	.08960	-.21410	.08890	-.03000	.28500	.00550	.02620	.04610	.02850
1.970	6.950	-29720	.08950	-.31880	.13390	-.04330	.28690	.00550	.02650	.04680	.02680
1.970	9.140	-30320	.08560	-.42880	.17580	-.05780	.28570	.00590	.02790	.04790	.02750
1.970	11.130	-30940	.08670	-.53250	.21750	-.07180	.28370	.00610	.02910	.04880	.02790
1.970	.440	-28880	.08670	-.02530	.01390	-.00500	.28000	.00500	.02370	.04270	.02800
GRADIENT		-.00385	.00078	-.04481	.01611	-.00299	.00012	.00000	.00003	.00011	-.00016

RUN NO. 9/ 0 RV/L = 4.97 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAF	QNSO	CASO	CASL	CASB
4.928	-7.780	-21990	.08380	.27040	-.10420	.03000	.25780	.00130	.00610	.00580	.00480
4.928	-5.860	-20980	.08280	.19300	-.07560	.02100	.25080	.00130	.00610	.00590	.00490
4.928	-3.820	-21390	.08330	.12320	-.04610	.01230	.24490	.00130	.00620	.00640	.00530
4.928	-1.800	-21120	.08300	.05370	-.02250	.00600	.23920	.00120	.00600	.00660	.00540
4.928	.450	-20800	.08200	-.02180	.00870	-.00310	.23990	.00100	.00480	.00670	.00580
4.928	2.460	-21680	.08670	-.09130	.03520	-.01100	.24100	.00120	.00570	.00670	.00570
4.928	4.540	-21790	.08680	-.15890	.06010	-.01820	.24670	.00120	.00580	.00670	.00550
4.928	6.580	-21500	.08680	-.23430	.08660	-.02540	.25440	.00120	.00600	.00690	.00550
4.928	8.600	-22780	.08650	-.30990	.11630	-.03900	.25940	.00130	.00620	.00690	.00530
4.928	.480	-21180	.08320	-.01970	.00850	-.00360	.23420	.00130	.00610	.00700	.00520
GRADIENT		-.00077	.00075	-.03497	.01333	-.00361	.00036	-.00001	-.00002	.00006	.00004

TABULATED SOURCE DATA, MPTC 579-560 (IA-57,1A46)

(R00011) (31 AUG 75)

MPTC 579 (IA37) (034) (T14) (812) (U6)

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
DELTA Z = 30.000

REFERENCE DATA

8007 = 6.1940 IN. 10000 = 2.7500 IN.
10007 = 5.1600 IN. 10000 = .0000 IN.
8007 = 5.1600 IN. 10000 = .0000 IN.
SCALE = .0040

RUN NO. 25/ 0 RVL = 4.94 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLH	CY	CYN	CEL	CAF	CBO	CABT	CABS
.600	-9.790	-.02300	-.00550	.42140	-.17360	.06410	.09480	.04090	.08060	.05460
.600	-7.990	-.01300	-.00700	.34330	-.14490	.05430	.10960	.03790	.07990	.05110
.600	-5.790	-.01650	-.00360	.25520	-.10940	.04070	.11860	.03660	.07140	.05010
.600	-3.710	-.02260	.00410	.17250	-.07470	.02760	.11500	.03670	.07040	.04960
.600	-1.660	-.03110	.01260	.06750	-.04310	.01560	.12000	.03530	.07130	.04560
.600	.400	-.03960	.02240	.01660	-.00340	.00210	.12430	.03360	.07230	.04300
.600	2.460	-.03970	.02330	-.07240	.03460	-.01240	.12640	.03310	.07260	.04150
.600	4.510	-.03610	.01960	-.13960	.06960	-.02560	.12610	.03390	.07660	.04050
.600	6.560	-.03100	.01600	-.25270	.10360	-.03630	.12660	.03450	.07950	.03990
.600	8.640	-.02710	.01140	-.30760	.13300	-.04660	.12530	.03610	.08190	.04050
.600	10.460	-.02500	.01140	-.36390	.16130	-.05950	.11810	.04160	.08190	.04390
.600	.400	-.03020	.01940	.01540	-.00460	.00140	.12400	.03390	.07160	.04390
GRADIENT		-.00135	.00174	-.00974	.01741	-.00646	.00119	-.00003	.00066	-.00094

RUN NO. 30/ 0 RVL = 5.91 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLH	CY	CYN	CEL	CAF	CBO	CABT	CABS
.600	-9.960	.00450	-.01790	.45150	-.16710	.06950	.11400	.04320	.07870	.05760
.600	-7.970	.00860	-.02060	.37000	-.15670	.05660	.12450	.04060	.07610	.05290
.600	-5.860	.01330	-.02260	.28010	-.12220	.04460	.12760	.03900	.07670	.04960
.600	-3.760	.01900	-.02320	.19160	-.08330	.03040	.13360	.03760	.07590	.04710
.600	-1.700	.02470	-.01120	.10790	-.04690	.01660	.13710	.03690	.07900	.04440
.600	.360	-.01440	.00180	.01660	-.00460	.00160	.13630	.03900	.07650	.04220
.600	2.460	-.00770	.00330	-.08010	.04040	-.01630	.13530	.03590	.07740	.04160
.600	4.510	-.00900	-.00700	-.16260	.07620	-.02910	.14160	.03640	.07750	.04060
.600	6.560	-.00400	-.00760	-.25020	.11790	-.04450	.14300	.03690	.07610	.03920
.600	8.790	-.00660	-.00610	-.32710	.14450	-.05260	.14490	.04070	.07760	.03910
.600	10.650	-.02040	.00090	-.40760	.17640	-.06430	.14320	.04440	.08100	.03960
.600	.360	-.01610	.00290	.02040	-.00630	.00140	.13960	.03520	.07600	.04150
GRADIENT		-.00160	.00156	-.04264	.01936	-.00719	.00109	-.00006	.00016	-.00061

0600011) (31 AUG 73)

HSPC 579 (IA37) (054) (714) (812) (U6)

PARAMETRIC DATA

REFERENCE DATA

REFP = 6.1800 IN. ZMRP = 2.7000 IN.
LREF = 3.1600 IN. YMRP = .0000 IN.
BREF = 3.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

ALPHA = .000
DELTA Z = 30.000

RUN NO. 31/ 0 RVL = 6.19 GRADIENT INTERVAL = -7.00/ 7.00

MAOH	BETA	ON	CLM	CY	CTN	CEL	CAF	QBO	CABO	CABT	CAB8
.894	-10.080	.01980	-.00230	.47380	-.80210	.07370	.13670	.00960	.04650	.08470	.05870
.894	-8.080	.02810	-.00910	.36140	-.16700	.05950	.14290	.00940	.04430	.08150	.05510
.894	-6.080	.03480	-.03180	.29920	-.13410	.04680	.13130	.00980	.04210	.08030	.05180
.894	-5.810	.03680	-.08460	.20380	-.09510	.03250	.11560	.00840	.03980	.07750	.04830
.894	-1.710	.03580	-.02390	.11280	-.05000	.01750	.16040	.00820	.03660	.07550	.04530
.894	.580	.02480	-.02460	.03440	-.03330	.00130	.16190	.00780	.03680	.07850	.04280
.894	2.480	.02250	-.02340	-.05810	.04990	-.01790	.16120	.00760	.03700	.08120	.04080
.894	4.570	.02000	-.02590	-.17680	.08110	-.03190	.16080	.00760	.03690	.08270	.04080
.894	6.680	.02080	-.03470	-.27110	.13180	-.04890	.16420	.00970	.04180	.07870	.04030
.894	8.800	.02770	-.01070	-.35540	.16480	-.05870	.16620	.00950	.04500	.08250	.03860
.894	10.700	-.01130	.00470	-.43190	.19300	-.06980	.16490	.01010	.04770	.08670	.03770
.894	.380	.08170	-.02950	.01410	-.00250	-.00010	.16470	.00780	.03710	.07940	.04300
GRADIENT	-.00146	.00078	-.04572	-.00167	-.00760	.00086	-.00002	-.00002	-.00010	.00024	-.00091

RUN NO. 32/ 0 RVL = 6.47 GRADIENT INTERVAL = -7.00/ 7.00

MAOH	BETA	ON	CLM	CY	CTN	CEL	CAF	QBO	CABO	CABT	CAB8
1.000	-10.110	.00690	.00080	.50330	-.22480	.08740	.21320	.01280	.05960	.10110	.07630
1.000	-8.070	.01680	-.00770	.40720	-.18390	.07190	.21960	.01210	.05680	.09950	.07460
1.000	-6.080	.02600	-.01330	.30790	-.14490	.05530	.22790	.01180	.05560	.09790	.07250
1.000	-5.880	.03190	-.01900	.21080	-.10170	.03780	.23350	.01140	.05380	.09620	.06910
1.000	-1.720	.02130	-.03560	.11410	-.05480	.02040	.23530	.01130	.05330	.09490	.06680
1.000	.790	.01730	.00180	-.00110	.00780	-.00180	.23340	.01080	.05090	.10040	.06380
1.000	2.300	.01730	-.00100	-.10830	.08410	-.02250	.23600	.01110	.05260	.10060	.06130
1.000	4.890	.01640	.00230	-.80370	.11220	-.04100	.23900	.01150	.05420	.10160	.05890
1.000	6.700	.01380	.00710	-.29990	.15570	-.05800	.23650	.01200	.05650	.10080	.05680
1.000	9.890	-.00390	.01630	-.39360	.19310	-.07330	.23680	.01230	.05810	.10180	.05730
1.000	10.790	-.01860	.02810	-.48880	.22640	-.08610	.23640	.01290	.06070	.10090	.05570
1.000	.370	.02540	-.00800	.00230	.00630	-.00230	.23030	.01080	.05110	.10110	.06400
GRADIENT	-.00129	.00167	-.04677	-.00167	.02459	-.00918	.00084	.00001	.00004	.00039	-.00116

TABULATED SOURCE DATA, HSPC 579-540 (IA-37,IA48)

DATE 10 SEP 75

CR00011) (31 AUG 75)

HSPC 579 (IA37) 004) (T14) (S12) (U6)

PARAMETRIC DATA

REFERENCE DATA

REF = 0.1400 SA. IN. YREF = 2.7500 IN.
 LREF = 0.1400 IN. YREF = 0.0000 IN.
 SREF = 0.1400 IN. ZREF = 0.0000 IN.
 SCALE = .0040

ALPHA = .000 ORBINC = .000
 DELTAZ = 30.000

RUN NO. 33/ 0 RVL = 6.56 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	ON	CLM	CY	CYN	CEL	CAF	QBO	CABO	CABT	CABG
1.101	-10.180	.00250	-.01140	.50810	-.21960	.00010	.25110	.01040	.04910	.08540	.06460
1.101	-6.180	.00360	-.02140	.40370	-.17930	.07350	.23740	.01000	.04720	.06390	.06450
1.101	-5.990	.04180	-.02360	.30310	-.13790	.05620	.20460	.03840	.04440	.06080	.06200
1.101	-5.940	.04250	-.02430	.20320	-.09560	.03740	.16680	.00820	.04330	.06140	.05970
1.101	-1.750	.02800	-.00650	.10910	-.05170	.01990	.26970	.00800	.04240	.06390	.05620
1.101	.420	.02130	-.00390	.00560	.00260	-.00020	.27130	.00390	.04030	.06280	.05370
1.101	2.310	.02220	-.00110	-.00630	.05410	-.02110	.27510	.00690	.04230	.06310	.05110
1.101	4.620	.02410	-.00260	-.01920	.09790	-.03960	.27510	.00930	.04460	.06620	.05040
1.101	6.770	.02590	-.00160	-.02680	.13780	-.05770	.27310	.00970	.04580	.06370	.04690
1.101	8.910	.01840	.00030	-.36300	.17430	-.07330	.27210	.01010	.04760	.06510	.04740
1.101	10.650	.00730	.00710	-.47390	.21000	-.08770	.27300	.01060	.04990	.06660	.05770
1.101	.370	.02300	-.00010	.00700	.00110	-.00070	.27130	.00680	.04070	.06390	.05770
GRADIENT		-.00165	.00003	-.04676	.02226	-.00805	.00105	.00002	.00012	.00039	-.00106

RUN NO. 34/ 0 RVL = 6.65 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	ON	CLM	CY	CYN	CEL	CAF	QBO	CABO	CABT	CABG
1.100	-10.280	.07000	-.05720	.48480	-.12160	.05540	.26930	.01060	.04990	.08140	.06660
1.100	-6.180	.02290	-.06060	.36850	-.15190	.06880	.27030	.01020	.04800	.06940	.06480
1.100	-6.000	.02610	-.06090	.28350	-.11330	.05070	.27690	.00960	.04540	.06780	.06220
1.100	-3.870	.02640	-.07140	.18610	-.07690	.03360	.26170	.00940	.04430	.06460	.06050
1.100	-1.740	.02960	-.06010	.02490	-.03780	.01710	.26460	.00930	.04360	.06370	.05790
1.100	.420	.02300	-.02870	-.00590	.00660	-.00220	.26610	.00910	.04320	.06390	.05460
1.100	2.530	.02360	-.05110	-.10360	.05410	-.02110	.26930	.00940	.04460	.06460	.05330
1.100	4.690	.02660	-.05330	-.19360	.09140	-.03690	.29120	.00990	.04660	.06510	.05360
1.100	6.910	.07940	-.05320	-.26770	.12690	-.05570	.29210	.01010	.04770	.06570	.05240
1.100	9.000	.07060	-.04770	-.36880	.16010	-.07160	.28600	.01090	.04950	.06690	.05390
1.100	10.970	.06120	-.04270	-.48230	.19410	-.08540	.28330	.01060	.05080	.06950	.05310
1.100	.400	.02190	-.05190	-.00540	.00660	-.00310	.28610	.00900	.04230	.06450	.05430
GRADIENT		-.00082	.00132	-.04478	.01923	-.00841	.00119	.00004	.00021	-.00037	-.00060

(R08011) (31 AUG 75)

HSFC 579 (1A37) (054) (714) (312) (US)

REFERENCE DATA

BREF = 4.1880 IN. XREF = 2.7500 IN.
 LREF = 5.1600 IN. YREF = .0000 IN.
 BREF = 5.1800 IN. ZREF = .0000 IN.
 SCALE = .0040

PARAMETER DATA

ALPHA = .000 ORBINC = .000
 DELTAZ = .00000

RUN NO. 21/ 0 RVL = 6.23 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAF	QBO	CABO	CABT	CABS
1.463	-10.250	.03540	-.03840	.48300	-.19820	.07830	.26410	.00790	.03720	.06950	.04720
1.463	-8.170	.04820	-.04320	.36830	-.14790	.08140	.29080	.00770	.03610	.06720	.04760
1.463	-5.960	.04870	-.04290	.26310	-.10560	.04490	.29260	.00710	.03390	.06630	.04770
1.430	-3.850	.02190	-.04250	.16410	-.06590	.02870	.29320	.00670	.03190	.06630	.04740
1.463	-1.710	.05310	-.04330	.07710	-.03120	.01330	.29930	.00660	.03110	.03990	.04790
1.463	.430	.05390	-.04200	-.01290	.00690	-.00290	.29970	.00620	.02990	.06130	.04450
1.463	2.960	.03110	-.03690	-.09990	.04110	-.01930	.30450	.00670	.03150	.06020	.04340
1.463	4.700	.04970	-.03760	-.16830	.07740	-.03320	.30340	.00710	.03390	.06270	.04210
1.463	6.850	.04440	-.03560	-.28660	.11680	-.05160	.30000	.00740	.03900	.06420	.04120
1.463	9.090	.04000	-.03370	-.59500	.15770	-.06790	.29690	.00770	.03690	.06440	.04090
1.463	11.040	.03597	-.03240	-.50060	.19740	-.08280	.29390	.00810	.03830	.06310	.04050
1.463	.440	.05520	-.04210	-.01870	.00950	-.00460	.29610	.00810	.02880	.06080	.04360
GRADIENT		-.00051	.00061	-.04627	.01713	-.00752	.00080	.00003	.00014	-.00020	-.00055

RUN NO. 16/ 0 RVL = 6.89 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAF	QBO	CABO	CABT	CABS
1.956	-10.260	.01680	-.02680	.47200	-.19500	.06980	.27130	.00640	.03030	.04370	.02940
1.956	-8.180	.01690	-.02470	.36350	-.15060	.05440	.27410	.00600	.02860	.04370	.02970
1.956	-5.980	.02290	-.02610	.28880	-.11140	.04090	.28560	.00570	.02700	.04320	.03120
1.956	-3.870	.02360	-.02560	.16820	-.06850	.02520	.28410	.00530	.02520	.04180	.03120
1.956	-1.750	.02530	-.02470	.07790	-.02920	.01130	.28200	.00510	.02410	.04100	.03070
1.956	.430	.02680	-.02530	-.01490	.00960	-.00270	.28370	.00490	.02340	.03860	.02920
1.956	2.990	.02410	-.02320	-.11000	.04750	-.01800	.28270	.00530	.02500	.04050	.02940
1.956	4.750	.02640	-.02470	-.20280	.06770	-.03140	.28660	.00570	.02690	.04220	.02730
1.956	6.920	.02140	-.02100	-.30190	.12690	-.04710	.28930	.00580	.02770	.04440	.02710
1.956	9.100	.01860	-.02200	-.40700	.16940	-.06300	.28340	.00610	.02900	.04930	.02730
1.956	11.060	.01250	-.01990	-.51950	.21300	-.07620	.28740	.00640	.03090	.04460	.02740
1.956	.440	.02570	-.02480	-.01860	.00960	-.00400	.27890	.00490	.02310	.03890	.02870
GRADIENT		-.00000	.00031	-.04380	.01628	-.07674	.00028	.00002	.00011	.00007	-.00035

TABULATED SOURCE DATA, MSFC 579-580 (1A-37,1A48)

(088011) (31 AUG 75)

MSFC 579 (1A37) (C54) (T14) (S1-) (U6)

PARAMETRIC DATA

ALPHA = .000 ORGINC = .000
DELTA Z = 30.000

REFERENCE DATA

REF = 6.1800 IN. XREF = 2.7200 IN.
LREF = 5.1800 IN. YREF = .0000 IN.
BREF = 5.1800 IN. ZREF = .0000 IN.
SCALE = .0040

RUN NO. 11/ 0 RV/L = 6.35 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAF	QBO	CABO	CABT	CABS
3.479	-7.820	-.0000	.0150	.29080	-.10990	.03590	.23920	.00290	.01370	.01490	.01020
3.479	-5.930	-.0000	.0180	.20980	-.07790	.02320	.23630	.00280	.01330	.01490	.01090
3.479	-3.720	-.03120	.02170	.13470	-.04870	.01590	.23290	.00280	.01310	.01470	.01180
3.479	-1.450	-.02870	.02370	.06270	-.02180	.00600	.22770	.00260	.01290	.01660	.01240
3.479	.450	-.03500	.02700	-.01330	.00670	-.00280	.23100	.00260	.01240	.01570	.01180
3.479	2.320	-.03480	.02650	-.06720	.03250	-.01140	.23180	.00270	.01300	.01690	.01070
3.479	4.630	-.03440	.02560	-.15990	.05820	-.01920	.23410	.00270	.01300	.01560	.01050
3.479	6.720	-.02890	.02080	-.23700	.08710	-.02720	.23930	.00280	.01320	.01530	.01000
3.479	8.820	-.02830	.01980	-.32300	.12180	-.04060	.24410	.00280	.01340	.01550	.00960
3.479	.420	-.03520	.02660	-.01880	.00810	-.00390	.23170	.00260	.01240	.01570	.01150
GRADIENT		-.00002	.00031	-.03590	.01304	-.00418	.07029	-.00000	.00000	.00005	-.00012

RUN NO. 10/ 0 RV/L = 4.97 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAF	QBO	CABO	CABT	CABS
3.479	-7.790	-.04290	.03180	.24830	-.09040	.03080	.22720	.00130	.00630	.00610	.00310
4.995	-5.670	-.04790	.03310	.17890	-.06440	.02100	.22270	.00130	.00630	.00620	.00370
4.995	-3.640	-.04910	.03610	.11280	-.04110	.01320	.21670	.00130	.00640	.00670	.00430
4.995	-1.600	-.05370	.03530	.04860	-.01680	.00500	.21350	.00130	.00620	.00700	.00470
4.995	.440	-.05490	.03670	-.01710	.00650	-.00230	.21280	.00130	.00620	.00700	.00490
4.995	2.430	-.04820	.03510	-.07340	.02680	-.00960	.21420	.00130	.00630	.00700	.00500
4.995	4.510	-.04940	.03720	-.13540	.04830	-.01700	.21940	.00130	.00640	.00700	.00480
4.995	6.590	-.04880	.03600	-.20120	.07150	-.02390	.22290	.00130	.00650	.00680	.00460
4.995	8.590	-.04430	.03570	-.27110	.09610	-.03310	.22690	.00130	.00660	.00680	.00480
4.995	.440	-.05100	.03630	-.01140	.00490	-.00250	.21390	.00130	.00640	.00710	.00490
GR. QIENT		.00014	.00013	-.03082	.01105	-.00368	.00010	-.00100	.00001	.00004	.00007

NSFC 579 (1A37) (CB4) (T14) (812) (US)

(064012) (31 AUG 75)

REFERENCE DATA

BREF = 6.1900 IN. XREF = 2.7500 IN.
 LREF = 3.1600 IN. YREF = .0000 IN.
 BREF = 5.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = 5.000 ORBINC = .000
 DELTAZ = 30.000

RUN NO. 39/ 0 RV/L = 4.93 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	ON	CLM	CY	CYN	QBL	CAF	QBO	CABO	CABT	CABS
.598	-9.790	.29440	-.09640	.41040	-.16710	.07270	.07590	.00890	.04040	.09280	.05190
.598	-7.850	.26330	-.08680	.33700	-.14260	.06170	.06420	.00790	.03720	.07590	.04810
.598	-5.750	.25990	-.08080	.25390	-.10320	.04660	.05470	.00750	.03530	.07530	.04690
.598	-3.710	.24810	-.07630	.16700	-.06800	.03020	.05970	.00700	.03330	.07270	.04610
.598	-1.640	.24270	-.06870	.08910	-.03470	.01590	.10180	.00680	.03210	.07170	.04480
.598	.400	.23620	-.06390	.01510	-.02270	.00130	.10360	.00660	.03100	.07140	.04440
.598	2.430	.23740	-.06480	-.06200	-.03090	-.01400	.10620	.00670	.03150	.07260	.04230
.598	4.500	.23680	-.06860	-.13790	.06240	-.02810	.10820	.00670	.03190	.07270	.04020
.598	6.570	.24080	-.07270	-.21900	.09800	-.04330	.10840	.00740	.03480	.07650	.03980
.598	8.630	.24690	-.08110	-.29290	.12790	-.05680	.10480	.00800	.03780	.07680	.04010
.598	10.500	.25430	-.09630	-.36590	.15570	-.06780	.10320	.00860	.04080	.07850	.04040
.598	.400	.24007	-.08630	.01360	-.00190	.00020	.10620	.00650	.03080	.07120	.04320
GRADIENT		-.00142	.00108	-.03794	.01633	-.00725	.00112	-.00002	-.00009	.00008	-.00062

RUN NO. 39/ 0 RV/L = 6.17 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	ON	CLM	CY	CYN	QBL	CAF	QBO	CABO	CABT	CABS
.898	-10.090	.31000	-.12960	.45940	-.18330	.07480	.13320	.00960	.04540	.08540	.05550
.898	-8.090	.32170	-.13300	.36340	-.15940	.06390	.13980	.00880	.04210	.08360	.05290
.898	-6.300	.32230	-.13340	.29890	-.12330	.04830	.14470	.00840	.03950	.07990	.05010
.898	-3.820	.32100	-.12940	.22200	-.08790	.03500	.14710	.00820	.03880	.08130	.04740
.898	-1.720	.30840	-.11630	.11180	-.04830	.01790	.15150	.00790	.03730	.07890	.04560
.898	.590	.29740	-.10830	.01690	-.00500	.00140	.15440	.00770	.03640	.08030	.04440
.898	2.480	.30570	-.11240	-.08020	.04350	-.01790	.15920	.00750	.03570	.07920	.04190
.898	4.570	.30830	-.11690	-.16900	.08390	-.03420	.15820	.00790	.03710	.08120	.04060
.898	6.680	.31320	-.12200	-.25780	.12170	-.05090	.15810	.00840	.03970	.08050	.04070
.898	8.810	.31880	-.12270	-.34270	.15270	-.06300	.15850	.00910	.04310	.08400	.04090
.898	10.750	.30820	-.11620	-.42420	.18100	-.07410	.15670	.00970	.04580	.08630	.03980
.898	.590	.30330	-.11000	.01200	-.00080	.00090	.15490	.00760	.03610	.07980	.04440
GRADIENT		-.00094	.00104	-.04378	.01950	-.00795	.00119	-.00002	-.00006	.00003	-.00077

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TABULATED SOURCE DATA, NSFC 378-560 (1A-37, 1A48)

NSFC 378 (1A37) (034) (T1.4) (S12) (U6)

(088012) (31 AUG 73)

REFERENCE DATA

SREF = 6.1960 IN. XREF = 2.7200 IN.
 LREF = 9.1600 IN. YREF = .0000 IN.
 SREF = 5.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = 5.000 ORBINC = .000
 DELTAZ = 30.000

RUN NO. 40/ 0 RVL = 6.57 GRADIENT INTERVAL = -7.00/ 7.00

WCH	BETA	CN	CLM	CY	CYN	CEL	CAF	QBO	CBO	CABT	CABS
1.099	-10.800	33970	-1.4850	.46720	-.19960	.08710	.24420	.01180	.03300	.08770	.06390
1.099	-8.130	33960	-1.4310	.39250	-.16450	.07170	.24610	.01080	.03110	.08800	.06320
1.099	-5.970	34180	-.14170	.29820	-.12140	.05280	.25030	.01010	.04760	.08570	.06460
1.099	-3.650	34450	-1.4030	.19250	-.08250	.03510	.24830	.00990	.04680	.08670	.06590
1.099	-1.750	33850	-.13410	.10610	-.04670	.01850	.25160	.00990	.04680	.08540	.06610
1.099	.390	33460	-1.13080	.00920	.00170	-.00190	.25060	.00960	.04530	.08600	.06450
1.099	2.510	33290	-1.12920	-.09080	.04750	-.02140	.25360	.01000	.04720	.08770	.06190
1.099	4.680	33760	-1.13470	-.17580	.08170	-.03620	.25980	.01020	.04820	.08820	.05900
1.099	6.770	33530	-1.13920	-.26660	.12020	-.05590	.25980	.01080	.05090	.08770	.05750
1.099	8.910	33080	-1.13890	-.36250	.15670	-.07190	.25760	.01110	.05220	.08790	.05670
1.099	10.860	32920	-1.13070	-.45410	.18050	-.08650	.25240	.01140	.05370	.08840	.05480
1.099	.403	33610	-.13070	.00470	.00390	-.00960	.25080	.00960	.04530	.08810	.06460
GRADIENT		-.00068	.002360	-.04367	.01932	-.00863	.00064	.00005	.00022	.00719	-.00064

RUN NO. 19/ 0 RVL = 8.27 GRADIENT INTERVAL = -7.00/ 7.00

WCH	BETA	CN	CLM	CY	CYN	CEL	CAF	QBO	CBO	CABT	CABS
1.461	-10.250	33950	-1.15390	.46040	-.17950	.07480	.27400	.00670	.04130	.06310	.05230
1.461	-8.170	33820	-1.15050	.31950	-.13940	.05960	.27650	.00680	.03870	.06150	.05130
1.461	-5.960	34060	-1.14810	.25470	-.09960	.04360	.28220	.00770	.03640	.06050	.05010
1.461	-3.650	34250	-1.14650	.15900	-.06040	.02900	.28730	.00730	.03440	.05870	.04820
1.461	-1.750	34090	-1.14210	.07200	-.02630	.01280	.29240	.00700	.03310	.05570	.04780
1.461	.430	34270	-1.14100	-.01280	.00690	-.00280	.29350	.00670	.03170	.05330	.04650
1.461	2.560	34420	-1.14270	-.09320	.03850	-.01630	.29090	.00710	.03340	.05490	.04650
1.461	4.700	34390	-1.14350	-.17990	.07080	-.03400	.29100	.00750	.03540	.05620	.04430
1.461	6.970	34470	-1.14530	-.27950	.11070	-.05000	.28840	.00780	.03700	.05930	.04000
1.461	9.040	34910	-1.14960	-.37990	.14810	-.06430	.28410	.00800	.03790	.05960	.03890
1.461	11.010	35310	-1.15450	-.48070	.18310	-.07680	.27640	.00840	.03970	.06130	.04040
1.461	.440	34510	-1.14110	-.01770	.00860	-.00470	.29130	.00620	.03920	.05190	.04590
GRADIENT		.00050	.00023	-.04066	.01600	-.00728	.00041	.00001	.00007	-.00009	-.00064

(R86012) (31 AUG 73)

TABLED SOURCE DATA, NSFC 579-580 (1A-37,1A43)

NSFC 579 (1A37) (084) (T14) (S12) (U8)

PARAMETRIC DATA

ALPHA = 5.000
DELTAZ = 30.000
ORFINC = .000

REFERENCE DATA

REF = 6.1600 IN. XREF = 2.7500 IN.
LREF = 9.1600 IN. YREF = .0000 IN.
BREF = 9.1600 IN. ZREF = .0000 IN.
SCALE = .0040

RUN NO. 18/ 0 INV/L = 6.06 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	ON	CLN	CY	CYN	CEL	CAF	QBO	CBO	CABT	CABS
1.943	-10.260	.58040	-.14180	.45670	-.16310	.06870	.58910	.00660	.03190	.04130	.02590
1.943	-9.800	.51810	-.13940	.36140	-.14490	.09600	.27000	.00610	.02900	.04220	.02690
1.943	-8.010	.31670	-.13670	.25760	-.10300	.04060	.27590	.00940	.02560	.04080	.02690
1.943	-3.860	.32300	-.13670	.16350	-.06310	.02510	.28350	.00520	.02460	.03690	.02720
1.943	-1.750	.32170	-.13600	.07200	-.02500	.01040	.28270	.00490	.02300	.03640	.02490
1.943	.420	.33100	-.14310	-.01440	.00960	-.00390	.28600	.00450	.02340	.03580	.02620
1.943	2.580	.33180	-.14140	-.10090	.04270	-.01730	.28650	.00550	.02600	.03700	.02820
1.943	4.740	.33680	-.14250	-.19640	.06040	-.03270	.29350	.00600	.02620	.03960	.02830
1.943	6.960	.33650	-.14060	-.29680	.12290	-.04910	.28910	.00600	.02690	.04080	.02720
1.943	9.110	.34220	-.14470	-.40260	.16390	-.06270	.26410	.00690	.03000	.04170	.02560
1.943	11.080	.34610	-.14730	-.49850	.19850	-.07400	.28340	.00690	.03220	.04280	.02470
1.943	.450	.32390	-.14050	-.08040	.01190	-.00340	.27910	.00480	.02270	.03530	.02590
GRADIENT		.00167	-.00046	-.04256	.01711	-.00684	.00104	.00005	.00025	.00006	.00006

RUN NO. 6/ 0 INV/L = 4.96 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	ON	CLN	CY	CYN	CEL	CAF	QBO	CBO	CABT	CABS
4.959	-7.750	.14480	-.03040	.22430	-.07670	.03070	.21160	.00120	.00600	.00340	.00310
4.959	-5.650	.13610	-.02570	.16080	-.05470	.02200	.20750	.00130	.00620	.00590	.00370
4.959	-3.610	.13060	-.02130	.09960	-.03620	.01340	.20270	.00130	.00610	.00580	.00430
4.959	-1.680	.14180	-.02240	.04170	-.01340	.00590	.19650	.00120	.00600	.00590	.00470
4.959	.430	.12990	-.01730	-.01470	.00560	-.00250	.19900	.00120	.00590	.00580	.00490
4.959	2.480	.12370	-.01580	-.07300	.02230	-.01120	.20010	.00130	.00610	.00600	.00500
4.959	4.530	.13700	-.02800	-.12920	.04180	-.01830	.20410	.00130	.00610	.00610	.00480
4.959	6.570	.14030	-.02530	-.19520	.06390	-.02670	.20790	.00130	.00630	.00600	.00460
4.959	8.580	.14340	-.02740	-.27930	.08690	-.03560	.21490	.00130	.00640	.00600	.00480
4.959	.480	.12510	-.01690	-.01470	.00410	-.00330	.20060	.00120	.00570	.00610	.00490
GRADIENT		.00084	-.00010	-.02674	.00959	-.00397	.00011	.00000	.00001	.00004	.00007

0000001) (27 JUL 73)

MSFC 580(1A48) 0004) (114) (812) (U8)

REFERENCE DATA

MSFC = 6.1800 58. IN. YARP = 2.7800 IN.
LREF = 5.1800 IN. YARP = .0000 IN.
MSFC = 5.1800 IN. ZARP = .0000 IN.
SCALE = .0040

BETA =
DELTA Z =

PARAMETRIC DATA

RUN NO. 3/ 0 RVL = 6.64 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	CN	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.251	-7.630	-1.3310	.13650	-.01370	.01080	-.00510	.18350	-.00040	-.10760	.19930	-.83490
1.251	-5.480	-.0376	.07240	-.01360	.01050	-.00450	.18360	-.00060	-.01970	.18640	-.10880
1.251	-3.340	.09870	.00630	-.01240	.01000	-.00380	.18540	-.00040	.06840	.18170	.36240
1.251	-1.240	.15170	-.05770	-.01270	.01020	-.00370	.18480	-.00110	.19570	.18190	.85770
1.251	.880	.24190	-.11950	-.01200	.00970	-.00330	.18330	-.00190	.23900	.18730	1.27810
1.251	3.080	.31860	-.16950	-.01080	.00900	-.00270	.18380	-.00080	.30840	.19960	1.54480
1.251	5.150	.36890	-.21540	-.01230	.01050	-.00300	.18140	.00010	.37100	.21560	1.72010
1.251	7.200	.43800	-.24760	-.01120	.00950	-.00250	.17710	.00010	.41330	.23070	1.79100
1.251	9.280	.47810	-.12070	-.01150	.00860	-.00260	.17370	.00040	.44430	.24860	1.78630
1.251	.990	.24881	-.12200	-.01200	.00860	-.00330	.16380	-.00260	.24360	.18710	1.30270
GRADIENT		.04031	-.02727	.00015	-.00006	.00015	-.00025	.00002	.03706	.00277	.17533

RUN NO. 35/ 0 RVL = 6.51 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	CN	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.466	-7.680	-1.3380	.13010	-.00030	.00780	-.00050	.19680	-.01650	-.10570	.21290	-.49650
1.466	-5.570	-.05440	.07560	-.00130	.00510	-.00040	.19180	-.01870	-.03630	.19610	-.18620
1.466	-3.470	.03670	.00790	-.00080	.00300	.00040	.19030	-.01920	.04820	.18770	.25680
1.466	-1.320	.13340	-.06010	-.00070	.00280	.00070	.18790	-.02030	.13770	.18470	.74520
1.466	.810	.22670	-.12390	-.00060	.00300	.00100	.18710	-.02020	.22400	.19030	1.17710
1.466	2.950	.31030	-.17910	-.00160	.00340	.00080	.18780	-.01880	.30030	.20350	1.47550
1.466	5.050	.36080	-.22460	-.00130	.00330	.00130	.18660	-.01750	.36300	.21950	1.6.370
1.466	7.140	.43160	-.25640	-.00130	.00330	.00160	.18400	-.01790	.40540	.23680	1.71590
1.466	9.200	.46690	-.27600	-.00080	.00290	.00160	.18200	-.01730	.43170	.25440	1.69680
1.466	.810	.22670	-.12510	-.00040	.00270	.00100	.18380	-.01960	.22600	.19200	1.17710
GRADIENT		.04159	-.02643	-.00005	.00003	.00013	-.00045	.00011	.03816	.00228	.17854

RUN NO. 26/ 0 RVL = 7.05 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	CN	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.965	-7.600	-.06260	.07780	.00410	-.00040	.00070	.20060	-.03070	-.21370	.20750	-.17220
1.965	-5.560	.02050	.04600	.00310	-.00070	.00140	.19580	-.03070	-.00140	.19660	-.00740
1.965	-3.480	.12780	.01170	.00400	-.00060	.00180	.18960	-.03060	.03910	.18760	.20860
1.965	-1.400	.06260	-.02610	.00440	-.00060	.00160	.18560	-.03080	.08710	.18350	.47490
1.965	.700	.15130	-.07640	.00470	-.00140	.00200	.18240	-.03150	.14910	.18330	.81350
1.965	2.800	.22370	-.13030	.00470	-.00140	.00170	.18000	-.03050	.21480	.19070	1.12510
1.965	4.910	.29170	-.17760	.00440	-.00120	.00140	.17920	-.03040	.27530	.20340	1.25270
1.965	7.000	.35280	-.21840	.00360	-.00010	.00110	.16110	-.02940	.32810	.22260	1.47210
1.965	9.070	.39060	-.24410	.00250	.00070	.00100	.17890	-.02960	.35740	.23620	1.50020
1.965	.710	.15110	-.08090	.00350	-.00190	.00220	.18040	-.03160	.15290	.18250	.83860
GRADIENT		.03051	-.02173	-.00001	.00000	-.00003	-.00019	.00006	.02708	.00801	.12576

DATE 18 SEP 75

TRANSLATED SOURCE DATA, WFFC 578-580 (1A-37,1A49)

PAGE 33

WFFC 580 (1A49) (054) (714) (312) (US)

(090002) (27 JUL 75)

REFERENCE DATA

SREF = 0.1800 IN. ZREF = 2.7200 IN.
 LREF = 5.1800 IN. YREF = .0000 IN.
 BREF = 5.1800 IN. ZREF = .0000 IN.
 SCALE = .0040

ALPHA = .000
 DELTAZ = .140
 ORIGIN = .000

PARAMETRIC DATA

RUN NO. 21/ 0 RV/L = 4.99 GRADIENT INTERVAL = -7.00/ 7.00

WCH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
.001	2.380	.09410	-.03360	-.01320	.03660	-.01980	.02170	.03260	.09760	.02270	4.28530
.002	4.430	.09780	-.03640	-.02910	.06400	-.03440	.02180	.03420	.05460	.02270	4.15400
.003	6.480	.09480	-.03660	-.14490	.09360	-.03040	.02180	.05830	.09960	.08000	4.96380
.004	8.530	.09980	-.04340	-.17980	.11230	-.08120	.01900	.05160	.09450	.02290	4.11690
.005	3.320	.09480	-.03220	-.01420	.01090	-.00320	.02190	.05160	.09450	.02290	4.11690
.006	GRADIENT	-.00258	.00124	-.02108	.01327	-.00779	.00011	.00006	-.00238	.00006	-.12617

RUN NO. 22/ 0 RV/L = 6.25 GRADIENT INTERVAL = -7.00/ 7.00

WCH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
.001	-6.040	.21680	-.10580	.18480	-.11630	.06670	.09670	.01900	.21420	.09960	2.13190
.002	-5.870	.21220	-.10450	.14040	-.09030	.05070	.09770	.01710	.21080	.10070	2.09330
.003	-5.880	.21300	-.10700	.09560	-.08270	.03540	.09730	.01560	.21160	.10030	2.10840
.004	-1.780	.20310	-.10100	.04000	-.02490	.01600	.08650	.01280	.20390	.09940	2.04940
.005	.330	.18440	-.06530	-.01330	.01080	-.00370	.09340	.01480	.18310	.09990	1.90940
.006	2.480	.18880	-.08960	-.06930	.04310	-.01190	.09470	.01650	.18690	.10220	1.86700
.007	4.320	.19250	-.09540	-.12180	.06380	-.04740	.09960	.01730	.19090	.10220	1.86700
.008	6.800	.17940	-.09640	-.16660	.11300	-.05990	.09810	.01930	.17710	.09840	1.79690
.009	8.700	.17030	-.09200	-.21100	.14080	-.07040	.10060	.02140	.16900	.10280	1.64280
.010	.330	.18210	-.06300	-.01480	.01170	-.00440	.09270	.01580	.18080	.09520	1.89900
.011	GRADIENT	-.10272	.07192	-.02489	.01657	-.00868	-.00003	.00023	-.00272	-.00009	-.02548

RUN NO. 23/ 0 RV/L = 6.80 GRADIENT INTERVAL = -7.00/ 7.00

WCH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
.001	-6.130	.21070	-.09630	.18150	-.11330	.07930	.16710	.00990	.20810	.17030	1.22170
.002	-6.010	.19470	-.07600	.13210	-.08330	.05940	.16380	.01010	.19220	.16650	1.15470
.003	-3.900	.17970	-.08840	.08180	-.05080	.03790	.16340	.00760	.17330	.16600	1.08200
.004	-1.790	.16820	-.05780	.03200	-.01850	.01630	.16240	.00820	.16580	.16480	1.00810
.005	.340	.18500	-.05520	-.01700	.01300	-.00560	.16790	.00630	.16260	.16750	.97100
.006	2.490	.19900	-.05270	-.06680	.04580	-.02710	.16790	.00950	.15680	.17010	.92090
.007	4.540	.19480	-.05560	-.11830	.08030	-.04840	.16900	.01290	.15730	.17120	.81830
.008	6.980	.15510	-.05370	-.16810	.11040	-.06960	.17100	.01260	.15280	.17310	.68230
.009	8.800	.15470	-.05690	-.21230	.13600	-.08630	.16770	.01520	.15240	.16980	.89770
.010	.340	.16780	-.05680	-.01980	.01340	-.00700	.16330	.00790	.16320	.16370	.99660
.011	GRADIENT	-.00261	.00168	-.02353	.01532	-.01012	.00066	.00036	-.00279	.00060	-.02008

W3FC 590 (1A40) (084) (T14) (812) (US)

REFERENCE DATA

8827	=	6.1640 IN.	9887	=	2.7200 IN.
13827	=	5.1600 IN.	19887	=	.0000 IN.
28827	=	5.1600 IN.	29887	=	.0000 IN.
SCALE	=	.0040			

9.07	0	MM/H :	1.67	GRADIENT INTERVAL :	-7.00/	7.00
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[illegible][illegible]

MAO1	BETA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.468	-0.210	.22280	-.11790	.19570	-.11150	.07400	.19080	-.01310	.22020	.19410	1.13430
1.468	-0.070	.21350	-.11240	.13730	-.10880	.06500	.18210	-.01420	.21060	.19510	1.07980
1.468	-3.940	.21100	-.11140	.08000	-.03370	.05640	.19420	-.01480	.20830	.19710	1.05660
1.468	-1.890	.20340	-.11040	.04360	-.02310	.01830	.19360	-.01650	.20580	.19610	1.04940
1.468	.300	.21260	-.11480	.00040	.00140	.00110	.19090	-.01680	.20590	.19390	1.06330
1.468	2.420	.20450	-.10810	.04620	.02980	-.01620	.19410	-.01690	.20190	.19680	1.02570
1.468	4.840	.19410	-.10040	-.06910	.05760	-.03320	.19570	-.01390	.19150	.19620	.96800
1.468	6.680	.18590	-.09510	-.13490	.06800	-.05150	.19360	-.01280	.18340	.19570	.93780
1.468	8.810	.17960	-.09360	-.16310	.11420	-.06842	.19190	-.01300	.17720	.19420	.91220
1.468	.310	.21370	-.11470	-.00210	.00310	.00000	.19070	-.01660	.21110	.19370	1.06940
1.468							.19070		.17980	.00008	-.01064

NO.	DATE	TIME	GRADIENT INTERVAL	z	-7.00/	7.00
1	10/10/68	10:00	10.00	10.00	10.00	10.00
2	10/10/68	10:05	10.05	10.05	10.05	10.05
3	10/10/68	10:10	10.10	10.10	10.10	10.10
4	10/10/68	10:15	10.15	10.15	10.15	10.15
5	10/10/68	10:20	10.20	10.20	10.20	10.20
6	10/10/68	10:25	10.25	10.25	10.25	10.25
7	10/10/68	10:30	10.30	10.30	10.30	10.30
8	10/10/68	10:35	10.35	10.35	10.35	10.35
9	10/10/68	10:40	10.40	10.40	10.40	10.40
10	10/10/68	10:45	10.45	10.45	10.45	10.45
11	10/10/68	10:50	10.50	10.50	10.50	10.50
12	10/10/68	10:55	10.55	10.55	10.55	10.55
13	10/10/68	11:00	11.00	11.00	11.00	11.00
14	10/10/68	11:05	11.05	11.05	11.05	11.05
15	10/10/68	11:10	11.10	11.10	11.10	11.10
16	10/10/68	11:15	11.15	11.15	11.15	11.15
17	10/10/68	11:20	11.20	11.20	11.20	11.20
18	10/10/68	11:25	11.25	11.25	11.25	11.25
19	10/10/68	11:30	11.30	11.30	11.30	11.30
20	10/10/68	11:35	11.35	11.35	11.35	11.35
21	10/10/68	11:40	11.40	11.40	11.40	11.40
22	10/10/68	11:45	11.45	11.45	11.45	11.45
23	10/10/68	11:50	11.50	11.50	11.50	11.50
24	10/10/68	11:55	11.55	11.55	11.55	11.55
25	10/10/68	12:00	12.00	12.00	12.00	12.00
26	10/10/68	12:05	12.05	12.05	12.05	12.05
27	10/10/68	12:10	12.10	12.10	12.10	12.10
28	10/10/68	12:15	12.15	12.15	12.15	12.15
29	10/10/68	12:20	12.20	12.20	12.20	12.20
30	10/10/68	12:25	12.25	12.25	12.25	12.25
31	10/10/68	12:30	12.30	12.30	12.30	12.30
32	10/10/68	12:35	12.35	12.35	12.35	12.35
33	10/10/68	12:40	12.40	12.40	12.40	12.40
34	10/10/68	12:45	12.45	12.45	12.45	12.45
35	10/10/68	12:50	12.50	12.50	12.50	12.50
36	10/10/68	12:55	12.55	12.55	12.55	12.55
37	10/10/68	13:00	13.00	13.00	13.00	13.00
38	10/10/68	13:05	13.05	13.05	13.05	13.05
39	10/10/68	13:10	13.10	13.10	13.10	13.10
40	10/10/68	13:15	13.15	13.15	13.15	13.15
41	10/10/68	13:20	13.20	13.20	13.20	13.20
42	10/10/68	13:25	13.25	13.25	13.25	13.25
43	10/10/68	13:30	13.30	13.30	13.30	13.30
44	10/10/68	13:35	13.35	13.35	13.35	13.35
45	10/10/68	13:40	13.40	13.40	13.40	13.40
46	10/10/68	13:45	13.45	13.45	13.45	13.45
47	10/10/68	13:50	13.50	13.50	13.50	13.50
48	10/10/68	13:55	13.55	13.55	13.55	13.5

NAME	BETA	ON	CLM	CY	CYN	QRL	CAP	CAB	CL	CD	L/D
1.992	-0.240	.17730	-.09630	.17720	-.10530	.06190	.18170	-.02860	.17500	.18400	.93110
1.992	-6.120	.15770	-.09310	.15270	-.07900	.04610	.18090	-.02930	.15540	.18290	.84990
1.992	-3.960	.14390	-.07720	.06840	-.05220	.03060	.18240	-.02990	.14170	.18420	.76930
1.992	-1.630	.13930	-.06930	.04570	-.02820	.01590	.18370	-.02980	.13730	.18540	.74060
1.992	.290	.14000	-.06930	.00270	.00070	.00110	.18410	-.02970	.13780	.18590	.74140
1.992	2.420	.13070	-.06330	-.04040	.02620	-.01400	.18460	-.02940	.12660	.18610	.69060
1.992	4.960	.12520	-.06160	-.08290	.05160	-.02690	.18390	-.02920	.12300	.18490	.66540
1.992	6.700	.13780	-.07090	-.12910	.08030	-.04420	.18570	-.02960	.13550	.18790	.72410
1.992	8.660	.13270	-.06260	-.17940	.10190	-.06220	.18760	-.02740	.13060	.18910	.69070
1.992	.300	.13940	-.06920	-.00060	.00190	-.00040	.18300	-.03050	.13720	.18470	.74270
1.992	-.00177	.13077	-.05107	-.02029	.01234	-.00701	.00029	.00006	-.00176	.00006	-.01061

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TRANSLATED SOURCE DATA, MFC 579-580 (IA-37, IA48)

0199003) (27 JUL 75)

M TC 580 (IA48) (34) (T14) (812)

PARAMETRIC DATA

REFERENCE DATA

REF = 6.1800 IN. REF = 2.7200 IN.
 LREF = 5.1800 IN. YREF = .0000 IN.
 BREF = 5.1800 IN. ZREF = .0000 IN.
 SCALE = .0040

ALPHA = .000
 DELTA Z = .140

RUN NO. 17/ 0 NV/L = 4.96 GRADIENT INTERVAL = -7.00/ 7.00

	BETA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
0001	-7.847	.06970	-.00000	.13700	-.03490	.02980	.01880	.05470	.05560	.01670	3.31150
0002	-5.810	.03710	.00650	.11740	-.07060	.04440	.01710	.05390	.03680	.01770	2.10400
0003	-3.780	.02710	.01320	.07290	-.04300	.02900	.01960	.05250	.02400	.02010	1.25910
0004	-1.700	.01800	.01810	.02960	-.01680	.01240	.01940	.05340	.01780	.01960	.90900
0005	.300	.01530	.01960	-.01240	.00860	-.00250	.02050	.05220	.01510	.02060	.75360
0006	2.400	.00540	.02490	-.02590	.03650	-.01750	.02010	.05430	.00320	.02010	.28030
0007	4.470	.00700	.02190	-.00930	.04440	-.03230	.01630	.05620	.00900	.01640	.37260
0008	6.460	.00910	.02190	-.14300	.08220	-.04740	.01630	.05620	.00900	.01630	.30720
0009	8.500	.00440	.02220	-.17830	.11130	-.09970	.01400	.05700	.00130	.01400	.06310
0010	.350	.01650	.02670	-.01420	.01070	-.00340	.01910	.05300	.01600	.01930	.83140
GRADIENT	-.00252	.00121	-.02108	.01317	-.00742	-.00306	.00017	.00017	-.00252	-.00011	-.13536

RUN NO. 18/ 0 NV/L = 6.26 GRADIENT INTERVAL = -7.00/ 7.00

	BETA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
0001	-6.050	.13150	-.04600	.18260	-.11350	.06950	.08950	.01570	.13040	.09150	1.42900
0002	-5.950	.11170	-.03680	.13610	-.06610	.04960	.06530	.01340	.11060	.08670	1.27560
0003	-3.840	.08980	-.02980	.08960	-.05720	.03370	.06350	.01160	.08790	.08470	1.15430
0004	-1.740	.06880	-.02040	.03790	-.02290	.01590	.06360	.00980	.08590	.08480	1.01270
0005	.390	.07440	-.01220	-.01200	.00960	-.00160	.06300	.01110	.07960	.08390	.87870
0006	2.440	.07180	-.01080	-.06400	.04970	-.02070	.06380	.01290	.07090	.08400	.63970
0007	4.860	.06610	-.01050	-.11670	.07960	-.02270	.06200	.01300	.06720	.08280	.81200
0008	6.810	.07210	-.01500	-.16960	.10950	-.173410	.06790	.01540	.07110	.08670	.60250
0009	8.780	.05940	-.00850	-.20270	.13160	-.03710	.06470	.01800	.05950	.08530	.76560
0010	.350	.06000	-.01600	-.01390	.01100	-.00270	.06410	.01110	.07830	.08900	.93310
GRADIENT	-.00354	.00180	-.02415	.01579	-.00841	.00007	.00019	.00019	-.00353	.00002	-.03887

RUN NO. 20/ 0 NV/L = 6.79 GRADIENT INTERVAL = -7.00/ 7.00

	BETA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
0001	-6.130	.15900	-.04600	.18670	-.11300	.07830	.16630	.01730	.19070	.16830	.69440
0002	-6.060	.13050	-.03510	.13370	-.08390	.05660	.16330	.01140	.12820	.16710	.76770
0003	-3.820	.11070	-.02070	.06330	-.05170	.03690	.16460	.00860	.10850	.16610	.65370
0004	-1.750	.09680	-.01050	.03320	-.01920	.01600	.16350	.00750	.09490	.16470	.57580
0005	.340	.09200	-.00710	-.01640	.01270	-.00490	.16480	.00750	.08990	.16570	.54250
0006	2.450	.08670	-.00510	-.06610	.04540	-.02570	.16630	.00890	.08480	.16740	.50560
0007	4.960	.06680	-.00840	-.11760	.07980	-.04700	.16670	.01130	.08480	.16780	.49440
0008	6.860	.06630	-.00900	-.16720	.11070	-.06700	.16940	.01100	.08430	.17050	.49470
0009	8.810	.06600	-.01190	-.21570	.13780	-.06490	.16890	.01310	.08400	.16980	.49470
0010	.340	.09290	-.00930	-.01860	.01470	-.00600	.16270	.00890	.09090	.16360	.55460
GRADIENT	-.00322	.00183	-.02370	.01558	-.00969	.00033	.00009	.00009	-.00319	.00026	-.02002

77-10013 (27 JUL 79)

REF 100 (1A48) (034) (714) (512)

PARAMETRIC DATA

REFERENCE DATA

SWP	=	6.1800 IN.	=	196P	=	2.7200 IN.
SWP	=	9.1600 IN.	=	196P	=	.0000 IN.
SWP	=	9.1600 IN.	=	206P	=	.0000 IN.
SCALE	=	.0040				

ALPHA =	.000	ORBSINC =	.000
BETA =	.140		

Variable	Mean	Std. Dev.	Std. Error	95% Confidence Interval	95% Prediction Interval
Dependent Variable	10.00	1.00	.10	9.80 - 10.20	9.50 - 10.50

[illegible][illegible]

	BETA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.468	3.40	-0.0201	-.07123	-.02127	.01315	-.00777	.00006	.00014	-.00199	.00003	-.01039
1.468	8.950	-.09660	-.06000	-.01370	.01050	-.00410	.19020	-.01490	.12680	.19170	.67200
1.468	6.710	.11670	-.03230	-.14800	.09320	-.07030	.19140	-.01030	.11690	.19100	.62230
1.468	4.570	.11110	-.09090	-.10210	.06570	-.03590	.19330	-.01170	.11500	.19270	.60910
1.468	2.450	.12230	-.01530	-.05540	.03640	-.01860	.19330	-.01390	.12110	.19160	.59070
1.468	.330	.13670	-.06160	-.01090	.00630	-.03260	.19060	-.01540	.13050	.19210	.62220
1.468	-1.800	.13120	-.02970	.03310	-.01630	.01260	.19030	-.01500	.12690	.19040	.67940
1.468	-3.860	.13250	-.06000	.07730	-.04590	.02930	.19240	-.01320	.13000	.19390	.67020
1.468	-6.050	.14580	-.06960	.12430	-.07470	.04700	.19160	-.01130	.14390	.19340	.74810
1.468	-8.170	.16850	-.07910	.17170	-.10300	.06320	.18970	-.01110	.15960	.19160	.83290

RUN NO. 29/ 0 RVL = 7.10 GRADIENT INTERVAL = -7.00/ 7.00

PARAM	BETA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	LD
1.964	-0.240	.10330	-.04380	.17980	-.10680	.06230	.17950	-.02680	.10130	.18070	.58060
1.964	-0.110	.06480	-.03140	.13240	-.07910	.04620	.17910	-.03090	.08230	.17690	.46000
1.964	-3.860	.06360	-.01960	.08730	-.63150	.03010	.17970	-.03100	.06160	.16040	.34260
1.964	-1.950	.09723	-.01100	.04430	-.02510	.01500	.18130	-.03070	.05550	.18190	.30560
1.964	.300	.05030	-.00570	.00080	.00130	.00030	.18230	-.03060	.04350	.18260	.26520
1.964	2.420	.04770	-.00483	-.04130	.02710	-.01400	.18290	-.03020	.04590	.18330	.25060
1.964	4.590	.04720	-.00590	-.06410	.03320	-.02870	.18170	-.03010	.04550	.18210	.24990
1.964	6.670	.04690	-.00500	-.12930	.06100	-.04430	.18040	-.03020	.04720	.18090	.26090
1.964	8.830	.03770	-.01750	-.17500	.10630	-.06000	.18190	-.02930	.05600	.18240	.30700
1.964	.310	.02190	-.00690	-.00270	.00340	-.00090	.17960	-.03350	.09010	.18030	.27800
1.964	-.00249	-.00156	-.00034	-.00004	.01243	-.00701	.00021	.00007	-.00047	.00018	-.01403

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TABULATED SOURCE DATA, MFC 579-560 (IA-37, 1A48)

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MFC 580 (1A48) (384) (T14) (312)

(080004) (27 JUL 73)

REFERENCE DATA

SREF = 4.1960 IN. XREF = 2.7200 IN.
 LREF = 5.1600 IN. YREF = .0000 IN.
 SREF = 5.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

BETA = .000
 DELTAZ = .140
 ORBINC = .000

PARAMETRIC DATA

RUN NO.	6/0	RV/L	5.00	GRADIENT INTERVAL = -7.00/ 7.00					
ALPHA	CLM	CY	CYN	CEL	CAP	CAB	C	CD	L/D
801	-.25960	-.01940	-.01540	-.00300	.02240	.05500	-.25430	.05680	-4.47420
801	-.17820	-.01830	-.01530	-.00360	.02310	.05300	-.17310	.04030	-4.34560
801	-.11260	-.01600	-.01110	-.00390	.02160	.05350	-.11180	.02850	-3.89770
801	-.05200	-.01700	-.01200	-.00370	.02070	.05320	-.05140	.02200	-2.33110
801	-.01670	-.01660	-.01120	-.00270	.01870	.05360	.01850	.01690	.97930
801	-.08200	-.02250	-.01550	-.00250	.01450	.05380	.08130	.01820	4.44900
801	-.15090	-.06630	-.01720	-.00270	.00880	.05300	.14960	.02110	7.07990
801	-.22390	-.11360	-.01870	-.00300	.00290	.05260	.22200	.02900	7.63550
801	-.28470	-.16110	-.02120	-.00380	-.00480	.05320	.29190	.04020	7.25140
801	-.01770	-.01760	-.01580	-.00300	.02000	.05360	.01750	.02010	.06950
801	.03232	-.02061	-.00004	.00012	-.00160	-.00004	.03214	-.00091	1.12678

RUN NO. 7/0 RV/L = 6.17 GRADIENT INTERVAL = -7.00/ 7.00

ALPHA	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
808	-.24970	-.01780	.01370	-.00460	.05060	.01360	-.23520	.12340	-1.90560
808	-.16460	-.01710	.01320	-.00390	.06900	.01190	-.15510	.10470	-1.48140
808	-.08450	-.01720	.01300	-.00370	.06640	.01060	-.07910	.09140	-.86480
808	-.00190	-.01620	.01210	-.00320	.06460	.01070	.00010	.06460	.00210
808	.06320	-.01690	.01240	-.00300	.08200	.01070	.08220	.08300	.99110
808	.16130	-.01500	.01160	-.00230	.06000	.01040	.15720	.08770	1.79140
808	.22090	-.01570	.01180	-.00250	.07910	.01110	.21340	.09770	2.16380
808	.27820	-.01650	.01270	-.00290	.08210	.01080	.26630	.11500	2.31360
808	.32900	-.01460	.01180	-.00210	.08070	.01110	.31230	.13120	2.36070
808	.06370	-.01790	.01090	-.00210	.06300	.01080	.06270	.06400	.98110
808	.03587	-.02302	-.00011	.00013	-.00068	-.00004	.03423	.00079	.32903

RUN NO. 5/0 RV/L = 6.62 GRADIENT INTERVAL = -7.00/ 7.00

ALPHA	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.101	-.27130	-.01680	.01400	-.00430	.16000	.00950	-.24600	.20320	-1.21050
1.101	-.18060	-.01650	.01360	-.00410	.16700	.00810	-.16330	.18400	-.88760
1.101	-.09410	-.01650	.01430	-.00420	.16610	.00740	-.08380	.17160	-.48820
1.101	.00360	-.01770	.01330	-.00370	.16520	.00650	.00760	.16310	.04630
1.101	.10160	-.01840	.01360	-.00400	.16280	.00780	.09950	.16390	.60720
1.101	.20060	-.01970	.01680	-.00340	.15950	.00840	.19230	.16940	1.13530
1.101	.29680	-.01790	.01600	-.00340	.15830	.00680	.28180	.18380	1.53300
1.101	.38050	-.01880	.01690	-.00310	.15350	.00770	.35880	.19680	1.72100
1.101	.46820	-.01920	.01710	-.00310	.14930	.00790	.36940	.20980	1.75990
1.101	.10790	-.01820	.01550	-.00390	.16360	.00830	.10580	.16500	.64140
1.101	.04314	-.03052	-.00027	.00003	-.00086	-.00003	.04215	-.00011	.23493

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TABULATED SOURCE DATA, MSFC 578-300 (1A-37,1A48)

MSFC 580 (1A48) (034) (714) (S12)

(089004) (27 JUL 73)

REFERENCE DATA

REF = 6.1820 IN. XREF = 2.7200 IN.
 LINEP = 5.1600 IN. YREF = .0000 IN.
 SREF = 5.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORBINC = .000
 DELTAZ = .140

RUN NO. 6/ 0 RV/L = 6.67 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	OK	CLM	CY	CYN	CEL	CAP	CAS	C.	CD	L/D
1.232	-7.770	-22880	.19910	-.01450	.01180	-.00460	.17810	-.00090	-.20070	.20710	-.96890
1.232	-5.610	-12330	.12820	-.01350	.01080	-.00410	.17840	-.00030	-.10520	.18980	-.55490
1.232	-3.470	-02020	.05440	-.01420	.01130	-.00410	.17820	-.00150	-.00940	.17910	-.05250
1.232	-1.350	.06430	-.01820	-.01390	.01110	-.00380	.17800	-.00220	.00830	.17590	.50300
1.232	.770	.17940	-.08230	-.01250	.00990	-.00320	.17900	-.00200	.17700	.18140	.97590
1.232	2.820	.26250	-.13620	-.01180	.00940	-.00280	.18000	-.00050	.25300	.19320	1.30910
1.232	5.080	.33680	-.18400	-.01110	.00940	-.00250	.17920	.00010	.31960	.20820	1.53490
1.232	7.110	.39910	-.21700	-.01240	.01020	-.00290	.17490	.00010	.36490	.22170	1.64340
1.232	9.210	.43390	-.24580	-.01250	.01010	-.00340	.17110	.00030	.40090	.23820	1.69210
1.232	.780	.18110	-.08310	-.01230	.00990	-.00310	.18110	-.00040	.37870	.18360	.97320
GRADIENT		.04345	-.02930	.00028	-.00017	.00017	.00014	.00007	.04018	.00189	.20099

RUN NO. 34/ 0 RV/L = 6.52 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	OK	CLM	CY	CYN	CEL	CAP	CAS	C.	CD	L/D
1.461	-7.820	-23750	.20180	-.00200	.00390	-.00120	.19400	-.01570	-.20860	.22450	-.92990
1.461	-5.720	-18170	.14660	-.00210	.00400	-.00080	.19010	-.01750	-.14190	.20330	-.69140
1.461	-3.630	-.07700	.08520	-.00150	.00360	-.00020	.18730	-.01740	-.04490	.19180	-.33670
1.461	-1.510	.01860	.01750	-.00160	.00340	.00030	.18670	-.01770	.02350	.18620	.12630
1.461	.640	.11750	-.05180	-.00080	.00290	.00050	.18590	-.01720	.11540	.18730	.61650
1.461	2.780	.21620	-.11580	-.00060	.00250	.00080	.18740	-.01530	.20690	.19770	1.04640
1.461	4.920	.30270	-.17610	-.00180	.00350	.00090	.18580	-.01490	.28580	.21110	1.35260
1.461	7.020	.36360	-.21440	-.00110	.00320	.00080	.18500	-.01490	.33830	.22810	1.48310
1.461	9.100	.41180	-.24510	-.00190	.00350	.00060	.18320	-.01420	.37780	.24610	1.53430
.680	.12920	.05460	-.00130	-.00130	.00310	.00020	.19080	-.01440	.12090	.19200	.62970
GRADIENT		.04426	-.03077	.00007	-.00008	.00015	-.00029	.00023	.04083	.00063	.19932

RUN NO. 27/ 0 RV/L = 7.06 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	OK	CLM	CY	CYN	CEL	CAP	CAS	C.	CD	L/D
1.965	-7.890	-13610	.13380	.00380	-.00020	.00090	.19900	-.03130	-.11020	.21570	-.51080
1.965	-5.860	-10020	.10770	.00430	-.00050	.00140	.19430	-.03120	-.08250	.20340	-.40580
1.965	-3.800	-.03710	.07560	.00390	-.00040	.00150	.18940	-.03090	-.04510	.19260	-.23430
1.965	-1.520	-.00240	.03240	.00360	-.00050	.00150	.18480	-.03100	.00250	.18480	.01360
1.965	.570	.05930	-.01350	.00440	-.00100	.00160	.18060	-.03090	.03750	.18130	.31730
1.965	2.680	.12660	-.06280	.00390	-.00110	.00190	.17810	-.03030	.11820	.18380	.64320
1.965	4.780	.19690	-.11450	.00350	-.00070	.00110	.17680	-.03020	.18350	.19270	.95210
1.965	6.870	.26850	-.16220	.00310	.00010	.00080	.17800	-.02920	.24330	.20890	1.17400
1.965	8.930	.31770	-.19680	.00300	.00040	.00130	.17710	-.02900	.28630	.22440	1.27560
.960	.08190	.01400	-.00140	.00480	-.00140	.00180	.17870	-.03220	.06010	.17930	.33530
GRADIENT		.02998	-.02191	-.00007	.00001	-.00004	-.00138	.00014	.02662	.00028	.13237

TABULATED SOURCE DATA, MSFC 578-580 (1A-37, 1A48)

MSFC 580 (1A48) (CS4) (TS) (812)

DATE 18 SEP 73

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTAZ = .140

REFERENCE DATA

REF = 6.1880 IN. XREF = 2.7800 IN.
LREF = 9.1800 IN. YREF = .0000 IN.
BREF = 5.1800 IN. ZREF = .0000 IN.
SCALE = .0040

RUN NO. 9/0 RV/L = 5.00 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.601	-7.680	-84500	.18270	-.01480	.01080	-.00430	.02590	.05590	-.25980	.05840	-4.24750
.601	-5.580	-17270	.13570	-.01820	.01190	-.00460	.02270	.05380	-.18970	.03940	-4.30560
.601	-3.550	-10340	.08210	-.01900	.01080	-.00410	.02350	.05400	-.10160	.03180	-3.19420
.601	-1.490	-03900	.04990	-.01810	.01140	-.00440	.02390	.05390	-.03430	.02440	-1.40570
.601	.980	.03300	.00760	-.01490	.01080	-.00340	.02090	.05410	.03280	.02120	1.54400
.601	2.830	.09600	-.03190	-.01900	.01100	-.00300	.01950	.05300	.09320	.01970	4.81450
.601	4.700	.18440	-.07490	-.01570	.01170	-.00290	.01110	.05090	.25110	.02450	6.62960
.601	6.720	.23320	-.11960	-.01920	.01360	-.00350	.00360	.05230	.03090	.03090	7.46680
.601	8.790	.25510	-.16940	-.01790	.01390	-.00370	-.00270	.05370	.04460	.02050	8.85780
.601	.590	.02840	.01060	-.01480	.01090	-.00350	.02020	.05330	.02820	-.02078	1.57370
.601	.03278	.03278	-.02055	-.00011	.00014	.00012	-.00164	-.00028	.03237		1.06477

RUN NO. 10/0 RV/L = 6.29 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.697	-7.720	-22690	.18270	-.01710	.01360	-.00590	.09120	.01400	-.21450	.12120	-1.77020
.697	-5.800	-14550	.12770	-.01670	.01570	-.00470	.08960	.01350	-.13610	.10340	-1.31610
.697	-3.500	-08320	.07510	-.01820	.01390	-.00500	.08820	.01160	-.05970	.09200	-.24880
.697	-1.390	.01720	.02280	-.01800	.01390	-.00500	.08710	.01060	.01930	.08660	.22360
.697	.690	.10440	-.03310	-.01790	.01370	-.00470	.08620	.01090	.10340	.08750	1.18160
.697	2.800	.17550	-.07770	-.01740	.01340	-.00430	.08140	.01090	.17130	.08990	1.90430
.697	4.900	.23480	-.11470	-.01650	.01280	-.00380	.08330	.01080	.22690	.10000	2.26740
.697	6.920	.29020	-.15100	-.01640	.01300	-.00360	.08130	.01190	.27830	.11570	2.40450
.697	8.010	.34340	-.18620	-.01800	.01390	-.00470	.08070	.01190	.32650	.13350	2.44510
.697	.690	.10910	-.03560	-.01820	.01420	-.00480	.08750	.01140	.10800	.08880	1.21600
.697	.03328	.03328	-.02249	.00008	-.00005	.00011	-.00079	-.00014	.03363	.00795	.31921

RUN NO. 12/0 RV/L = 6.67 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.102	-7.760	-25090	.22230	-.01630	.01360	-.00480	.17120	.01100	-.22350	.20390	-1.10810
1.102	-5.820	-16110	.16150	-.01660	.01420	-.00490	.17030	.01040	-.14370	.16520	-.77570
1.102	-3.490	-07540	.10510	-.01650	.01440	-.00470	.16900	.00860	-.06500	.17330	-.37510
1.102	-1.350	.02370	.03770	-.01760	.01540	-.00420	.16750	.00760	.02960	.16680	.17780
1.102	.760	.12610	-.03060	-.01810	.01580	-.00430	.16520	.00640	.12390	.16620	.74250
1.102	2.920	.22870	-.10660	-.01870	.01640	-.00450	.16300	.00650	.22010	.17440	1.26160
1.102	5.070	.32520	-.16640	-.01810	.01620	-.00380	.16210	.00860	.30960	.19030	1.62680
1.102	7.110	.38440	-.20570	-.01990	.01800	-.00350	.15670	.00880	.36200	.20310	1.78180
1.102	9.200	.42370	-.23000	-.01960	.01770	-.00370	.15190	.00930	.39390	.21780	1.80860
1.102	.760	.13290	-.03540	-.01830	.01600	-.00430	.16790	.00930	.13060	.18960	.77010
1.102	.04603	.04603	-.03106	-.00020	.00022	.00008	-.00082	-.00013	.04500	.00039	.23379

TABULATED SOURCE DATA, NSFC 579-560 (IA-37, IA48)

(R69005) (27 JUL 75)

NSFC 560 (IA48) (CB4) (T9) (S12)

PARAMETRIC DATA

REFERENCE DATA

REF = 6.1960 IN. 200P = 2.7200 IN.
 LREF = 5.1600 IN. YREF = .0000 IN.
 BREF = 5.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

BETA = .000 ORIGIN = .000
 DELTA Z = .140

RUN NO. 11/ 0 RVL = 6.72 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.254	-7.760	-21480	.18970	-.01350	.01080	-.00500	.18190	.00110	-.18610	.20920	-.89870
1.254	-7.760	-21480	.18970	-.01350	.01080	-.00500	.18190	.00110	-.18610	.20920	-.89870
1.254	-5.800	-10830	.11520	-.01340	.01070	-.00470	.18180	.00080	-.09000	.19180	-.46990
1.254	-3.480	-.03360	.04250	-.01350	.01100	-.00440	.19100	.00000	.00700	.16090	.03910
1.254	-1.340	.09930	-.02930	-.01360	.01100	-.00420	.18120	-.00140	.10350	.17880	.57920
1.254	.800	.19870	-.09550	-.01160	.00980	-.00340	.18260	-.00060	.19610	.18590	1.05680
1.254	2.850	.29410	-.13160	-.01150	.00960	-.00320	.18350	.00020	.27430	.19790	1.34820
1.254	5.090	.39840	-.19970	-.01150	.00970	-.00310	.18180	.00080	.34080	.21290	1.60080
1.254	7.150	.41700	-.23760	-.01080	.00920	-.00280	.17660	.00000	.39180	.22710	1.72490
1.254	9.240	.46140	-.26600	-.01150	.00960	-.00320	.17180	.00000	.42780	.24370	1.75520
1.254	.800	.20690	-.10150	-.01240	.01030	-.00360	.18410	-.00070	.20360	.18700	1.08970
1.254	.800	.04406	-.06972	.00023	-.00014	.00017	.00012	.00003	.04074	.00220	.19873

GRADIENT

RUN NO. 31/ 0 RVL = 6.49 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.462	-7.800	-22180	.18960	-.00190	.00380	-.00180	.19420	-.01650	-.19310	.22250	-.86780
1.462	-5.700	-.14150	.13130	-.00220	.00400	-.00140	.19050	-.01750	-.12190	.20360	-.59860
1.462	-3.810	-.03290	.06750	-.00140	.00340	-.00100	.18880	-.01650	-.04090	.19180	-.21350
1.462	-1.450	.04410	-.00060	-.00190	.00340	-.00060	.18670	-.01750	.04890	.18750	.26090
1.462	.680	.14600	-.07160	-.00150	.00330	-.00040	.18790	-.01750	.14370	.18970	.75780
1.462	2.820	.24880	-.14270	-.00110	.00290	-.00040	.18670	-.01570	.25910	.20080	1.19090
1.462	4.960	.33300	-.19770	-.00200	.00340	.00060	.18720	-.01500	.31560	.21530	1.46350
1.462	7.080	.39280	-.23460	-.00250	.00370	.00040	.18550	-.01500	.36700	.23240	1.57860
1.462	9.150	.43240	-.25930	-.00250	.00380	.00010	.18340	-.01460	.39780	.24960	1.59260
1.462	.890	.15350	-.07850	-.00160	.00340	-.00060	.19050	-.01600	.15180	.19230	.78630
1.462	.890	.04923	-.03136	.00003	-.00006	.00013	-.00024	.00020	.04179	.00118	.20115

GRADIENT

RUN NO. 30/ 0 RVL = 7.12 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.965	-7.880	-12510	.12270	.00200	.00000	-.00060	.19770	-.03110	-.09750	.21260	-.45860
1.965	-5.850	-.09320	.10010	.00280	-.00020	-.00040	.19340	-.03080	-.07370	.20170	-.36540
1.965	-3.590	-.04630	.06470	.00290	-.00060	-.00010	.18860	-.03150	-.03440	.19110	-.18030
1.965	-1.310	.00750	.02400	.00350	-.00090	.00000	.18360	-.03120	.01240	.18330	.06790
1.965	.580	.07010	-.02200	.00390	-.00080	.00010	.17990	-.03110	.06830	.18060	.37820
1.965	2.670	.13700	-.07160	.00300	-.00070	.00000	.17810	-.03070	.12850	.18430	.69730
1.965	4.770	.20760	-.12210	.00300	-.00050	-.00010	.17620	-.03070	.19220	.19290	.99630
1.965	6.850	.27550	-.16910	.00270	.00000	.00000	.17620	-.03010	.25250	.20780	1.21480
1.965	8.960	.32940	-.20370	.00200	.00090	.00080	.17640	-.02870	.29750	.22760	1.30740
1.965	.800	.07340	-.02290	.00360	-.00140	.00030	.17680	-.03400	.07150	.17750	.40310
1.965	.800	.02966	-.02187	-.00053	.00002	.00002	-.00140	.00008	.02651	.00040	.13226

GRADIENT

IRADIATED SOURCE DATA, MSFC 579-580 (1A-37,1A48)

DATE 18 SEP 73

MSFC 580 (1A48) (094) (79) (312)

(R89006) (27 JUL 73)

PARAMETRIC DATA

REFERENCE DATA

BREF = 6.1800 IN. XREF = 2.7200 IN.
 LREF = 5.1600 IN. YREF = .0000 IN.
 BREF = 5.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

ALPHA = .000 ORBINC = .000
 DELTAZ = .140

RUN NO. 16/ 0 RV/L = 5.00 GRADIENT INTERVAL = -7.00/ 7.00

MAOH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.603	-7.890	.04810	-.00810	.15120	-.09280	.05470	.01530	.05570	.04790	.01570	3.03760
.603	-5.800	.04290	-.00220	.10960	-.06680	.03990	.01700	.05400	.04230	.01740	2.42960
.603	-3.790	.04220	.00360	.06770	-.04050	.02480	.02040	.05180	.02080	.02080	2.01580
.603	-1.700	.03700	.00510	.02780	-.01560	.01100	.02060	.05200	.03680	.02120	1.73380
.603	.320	.03400	.00730	-.01280	.00990	-.00330	.02180	.05140	.03380	.02210	1.52440
.603	2.400	.02920	.00930	-.05640	.03740	-.01840	.02120	.05290	.02900	.02150	1.35240
.603	4.470	.02610	.00850	-.05930	.06460	-.03290	.02030	.05410	.02590	.02060	1.25670
.603	6.480	.01540	.01400	-.14350	.09290	-.04830	.01780	.05470	.01520	.01800	.84930
.603	8.590	.01590	.01140	-.17890	.11260	-.06030	.01700	.05810	.01530	.01710	.89520
.603	.330	.03330	.00820	-.01370	.01030	-.00370	.02100	.05200	.03310	.02140	1.54900
GRADIENT		-.00211	.00123	-.02032	.01293	-.00712	.00005	.00015	-.00211	.00003	-.11562

RUN NO. 15/ 0 RV/L = 6.27 GRADIENT INTERVAL = -7.00/ 7.00

MAOH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.601	-8.130	.12160	-.05160	.17610	-.11410	.06180	.08970	.01810	.12070	.09020	1.33670
.601	-5.820	.12580	-.05070	.13520	-.06680	.04720	.08630	.01390	.12270	.08780	1.39770
.601	-3.830	.12330	-.04630	.09000	-.05830	.03240	.08570	.01130	.12190	.08720	1.39770
.601	-1.780	.11510	-.04030	.03780	-.02310	.01470	.08650	.01030	.11400	.08800	1.29580
.601	.330	.10570	-.03380	-.01550	.01230	-.00440	.09590	.01080	.10460	.08710	1.20040
.601	2.440	.10040	-.03100	-.06470	.04480	-.02130	.08590	.01190	.09930	.08710	1.14100
.601	4.500	.09380	-.03120	-.11840	.08090	-.03960	.08370	.01310	.09480	.08410	1.12760
.601	6.610	.09700	-.03470	-.16590	.11230	-.05460	.08850	.01460	.09590	.08960	1.07070
.601	8.720	.07970	-.02540	-.20610	.13570	-.06770	.08650	.01900	.07880	.08930	.88000
.601	.330	.10320	-.03180	-.01690	.01300	-.00530	.08500	.01160	.10220	.08620	1.18480
GRADIENT		-.00255	.00156	-.02429	.01611	-.00829	.00001	.00013	-.00255	-.00003	-.02861

RUN NO. 13/ 0 RV/L = 6.57 GRADIENT INTERVAL = -7.00/ 7.00

MAOH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.100	-8.110	.11780	-.03670	.17820	-.11160	.07590	.16750	.01210	.11580	.16890	.63550
1.100	-5.970	.11470	-.03150	.13070	-.08280	.05590	.16600	.01120	.11270	.16740	.67380
1.100	-3.860	.11310	-.02670	.08020	-.04590	.03460	.16790	.00940	.11100	.16930	.65560
1.100	-1.770	.11000	-.02260	.03100	-.01760	.01460	.16730	.00850	.10790	.16870	.63970
1.100	.340	.11220	-.02410	-.01740	.01340	-.00380	.16760	.00800	.11000	.16900	.65100
1.100	2.470	.10420	-.01910	-.06770	.04640	-.02660	.17030	.01020	.10200	.17160	.59460
1.100	4.800	.09410	-.01560	-.12030	.08170	-.04790	.17020	.01260	.09200	.17130	.53740
1.100	6.880	.09060	-.01650	-.16980	.11190	-.06750	.17020	.01190	.08950	.17130	.51730
1.100	8.640	.08140	-.01430	-.21890	.13960	-.08500	.17140	.01370	.07950	.17230	.46140
1.100	.340	.10160	-.01790	-.01940	.01530	-.00650	.16570	.00950	.10960	.16700	.59640
GRADIENT		-.00197	.00120	-.02365	.01542	-.00973	.00034	.00017	-.00197	.00031	-.01268

TABULATED SOURCE DATA, MSFC 579-380 (1A-37,1A48)

(0890006) (27 JUL 73)

MSFC 580 (1A48) (C84) (79) (S12)

PARAMETRIC DATA

REFERENCE DATA

SREF = 6.1800 IN. XREF = 2.7200 IN.
 LREF = 5.1800 IN. YREF = .0000 IN.
 SREF = 5.1800 IN. ZREF = .0000 IN.
 SCALE = .0040

ALPHA = .000 ORBINC = .000
 DELTAZ = .140

RUN NO. 14/ 0 RV/L = 6.73 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLM	CY	CYN	CBL	CAP	CAB	CL	CD	L/D
1.481	-8.150	.16740	-.04090	.16530	-.09490	.06730	.18230	.00200	.16310	.18440	.69320
1.249	-5.960	.17130	-.06030	.11870	-.07100	.04950	.16230	.00070	.16820	.18450	.91130
1.249	-3.870	.17340	-.08000	.07330	-.04320	.03150	.16310	.00030	.17090	.19340	.92170
1.249	-1.770	.17510	-.07980	.02910	-.01590	.01320	.16340	-.00060	.17280	.19570	.92960
1.249	.330	.17920	-.06280	-.01460	.01170	-.00470	.16260	-.00090	.17670	.19500	.93540
1.249	2.470	.16740	-.07520	-.09930	.03920	-.02340	.18560	.00170	.16500	.18780	.87850
1.249	4.610	.15450	-.06730	-.10530	.06850	-.04210	.18670	.00300	.15210	.18660	.80630
1.249	6.700	.14210	-.06170	-.15150	.09640	-.08010	.18610	.00370	.13980	.18780	.74420
1.249	8.870	.12990	-.05680	-.19990	.12350	-.07810	.18490	.00480	.12770	.18640	.68510
1.249	.340	.17460	-.07850	-.01590	.01250	-.00570	.18340	.00000	.17210	.18570	.92690
1.249	GRADIENT	-.00221	.00145	-.02119	.01317	-.00665	.00035	.00023	-.00220	.00031	-.01323

RUN NO. 32/ 0 RV/L = 6.51 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLM	CY	CYN	CBL	CAP	CAB	CL	CD	L/D
1.481	-8.150	.13750	-.07120	.16660	-.09980	.06080	.16670	-.01230	.13380	.18330	.72130
1.481	-6.020	.14040	-.06970	.11990	-.07180	.04340	.19120	-.01260	.13620	.19290	.71660
1.481	-3.920	.14490	-.07070	.07560	-.04490	.02690	.19250	-.01390	.14260	.19420	.73400
1.481	-1.800	.14740	-.07160	.03170	-.01760	.01110	.19270	-.01470	.14510	.19450	.74610
1.481	.330	.15090	-.07430	-.01190	.00920	-.00400	.19200	-.01490	.14860	.19580	.76690
1.481	2.450	.14420	-.06990	-.10540	.03720	-.01940	.19520	-.01240	.14190	.19690	.72090
1.481	4.570	.13740	-.06200	-.14960	.06640	-.03600	.19520	-.01090	.13520	.19660	.69690
1.481	6.710	.12970	-.06280	-.19780	.09370	-.05290	.19320	-.01090	.12750	.19460	.65520
1.481	8.860	.12370	-.06280	.12220	.12220	-.07010	.19170	-.00960	.12360	.19310	.64020
1.481	.340	.15030	-.07330	-.01430	.01110	-.00310	.19230	-.01440	.14820	.19410	.76350
1.481	GRADIENT	-.00085	.00064	-.02104	.01302	-.00749	.00023	.00023	-.00065	.00021	-.00512

RUN NO. 29/ 0 RV/L = 7.12 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLM	CY	CYN	CBL	CAP	CAB	CL	CD	L/D
1.939	-8.220	.07490	-.03070	.17390	-.10340	.05840	.17710	-.03020	.07310	.17790	.41120
1.939	-6.100	.07190	-.02700	.12820	-.07650	.04170	.17790	-.03070	.07010	.17860	.39280
1.939	-3.970	.06820	-.02220	.08480	-.04030	.02680	.17940	-.03080	.06710	.18010	.36890
1.939	-1.840	.06180	-.01560	.04260	-.02460	.01290	.18060	-.03100	.06400	.18120	.33120
1.939	.300	.06110	-.01430	.00060	-.00360	-.00090	.18090	-.03090	.05920	.18150	.32660
1.939	2.430	.06200	-.01590	-.04170	.02690	-.01430	.18150	-.03040	.06020	.18210	.33060
1.939	4.560	.06160	-.01690	-.08420	.03280	-.02790	.18160	-.03000	.05980	.18220	.32820
1.939	6.700	.06110	-.01840	-.13020	.08060	-.04350	.18340	-.02930	.05930	.18400	.32260
1.939	8.860	.05840	-.01840	-.18070	.11110	-.06190	.18470	-.02830	.05670	.18520	.30620
1.939	.310	.06140	-.01450	-.00190	.00230	-.00200	.17980	-.03150	.05960	.18050	.33030
1.939	GRADIENT	-.00076	.00060	-.02005	.01220	-.00657	.00036	.00031	-.00076	.00036	-.00490



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TABULATED SOURCE DATA, NSFC 579-580 (IA-37,1A48)

PAGE 43

(R89007) (27 JUL 73)

NSFC 580(1A48) (C54) (T9) (S12) (ATTACH POST OFF)

REFERENCE DATA

REF = 6.1800 IN. YREF = 2.7800 IN.
LREF = 5.1800 IN. YREF = .0000 IN.
BREF = 5.1800 IN. ZREF = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
DELTAZ = .140

RUN NO. 36/ 0 RVL = 6.25 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.901	-6.040	.04780	.00240	.17670	-.11170	.08120	.09380	.01910	.04680	.09570	.48680
.901	-6.040	.05270	.00150	.13270	-.06410	.04650	.09560	.01670	.05170	.09620	.53750
.901	-5.980	.05630	-.00120	.09080	-.03880	.03270	.09540	.01450	.05720	.09600	.59630
.901	-5.970	.04110	.01270	.03720	-.02230	.01430	.09180	.01510	.04010	.09230	.43540
.901	-1.760	.04110	.01270	.03720	-.02230	.01430	.09180	.01510	.03540	.09120	.38820
.901	.330	.05640	.01640	-.01230	.01020	-.00230	.09090	.01590	.03660	.09330	.39230
.901	2.420	.03760	.01420	-.06390	.04360	-.02000	.09290	.01590	.02230	.09180	.24300
.901	4.560	.02320	.02120	-.11670	.07910	-.03810	.09160	.01670	.02050	.09740	.21300
.901	6.610	.02150	.02070	-.16320	.10920	-.05250	.09720	.01850	.00530	.09700	.05560
.901	8.700	.00630	.02840	-.20330	.13260	-.06510	.09700	.02140	.03980	.09360	.42570
.901	.330	.04080	.01270	-.01510	.01170	-.00350	.08320	.01510	-.00280	-.00006	-.02947
.901	GRADIENT	-.00285	.00177	-.02392	.01571	-.00805	-.00003	.00017			

RUN NO. 37/ 0 RVL = 6.66 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.253	-6.190	.10200	-.03280	.16650	-.09930	.06720	.18500	.00550	.09980	.18620	.53640
1.253	-6.040	.10580	-.03200	.12790	-.07220	.04950	.18740	.02470	.10170	.18660	.53910
1.253	-5.920	.10660	-.03430	.07420	-.04340	.03100	.18700	.00390	.10640	.18630	.56530
1.253	-1.790	.11130	-.03560	.02850	-.01490	.01260	.18550	.00270	.10910	.18680	.58400
1.253	.340	.11280	-.03660	-.01490	.01130	-.00470	.18400	.00160	.11040	.18530	.59610
1.253	2.450	.10320	-.03070	-.03680	.03860	-.02240	.18810	.00390	.10300	.18930	.54400
1.253	4.580	.09390	-.02360	-.10470	.06720	-.04120	.18890	.00330	.09170	.19000	.48280
1.253	6.700	.07630	-.01440	-.15200	.09620	-.05980	.18930	.00720	.07620	.19050	.40040
1.253	8.680	.07690	-.01700	-.19860	.12190	-.07720	.18830	.00670	.07480	.18910	.39590
1.253	.340	.10780	-.03170	-.01650	.01260	-.00550	.18630	.00320	.10560	.18760	.56310
1.253	GRADIENT	-.00188	.00133	-.02125	.01312	-.00853	.00022	.00019	-.00188		-.01044

DATE 18 SEP 73

TABULATED SOURCE DATA, NSFC 579-580 (1A-37,1A48)

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NSFC 580 (1A48) (C84) (T9) (S12) (ATTACH POST OFF)

(R89008) (27 JUL 73)

REFERENCE DATA

REF = 0.1800 IN. YREF = 2.7200 IN.
 LREF = 9.1600 IN. YLREF = .0000 IN.
 SREF = 9.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORIGIN = .000
 DELTA = .140

RUN NO. 39/ 0 RVL = 6.24 GRADIENT INTERVAL = -7.00/ 7.00

MAJOR	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
.896	-7.820	-3.310	.25340	-.00390	.00560	-.00100	.10360	.01860	-.30790	.14890	-2.09560
.896	-5.740	-2.5810	.19560	-.00320	.00520	-.00020	.10300	.01800	-.22660	.12630	-1.79390
.896	-3.630	-1.5100	.13760	-.00530	.00630	-.00040	.10340	.01740	-.14430	.10960	-1.51430
.896	-1.530	-.00870	.08280	-.00490	.00560	-.00020	.09690	.01800	-.06600	.09860	-.66950
.896	.800	.02170	.02370	-.00720	.00670	-.00090	.09230	.01570	.02070	.09250	.22400
.896	.7690	.09490	-.02080	-.00570	.00530	.00010	.09740	.01590	.09060	.09180	.98680
.896	4.780	.16040	-.06280	-.00810	.00740	.00000	.08760	.01450	.13260	.10070	1.51500
.896	6.890	.22020	-.10130	-.00900	.00800	-.00060	.08620	.01400	.20830	.11190	1.86170
.896	8.910	.27010	-.13390	-.00960	.00890	-.00170	.08450	.01440	.25370	.12530	2.02410
.896	.600	.02270	.02460	-.00740	.00690	-.00090	.09310	.01510	.02170	.09340	.23280
GRADIENT		.03676	-.02374	-.00040	.00018	-.00010	-.00145	-.00031	.03495	-.00117	.31096

RUN NO. 40/ 0 RVL = 6.68 GRADIENT INTERVAL = -7.00/ 7.00

MAJOR	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
1.249	-7.670	-3.1250	.26450	-.00050	.00500	.00000	.18450	.00320	-.29430	.22590	-1.26040
1.249	-5.750	-.20710	.18990	-.00150	.00560	.00000	.18220	.00240	-.19780	.20200	-.92960
1.249	-3.820	-.10770	.11760	-.00160	.00560	.00040	.18070	.00140	-.09610	.18780	-.51320
1.249	-1.490	-.00590	.04820	-.00280	.00450	.00010	.18160	.00170	-.00070	.18190	-.00430
1.249	.670	.10160	-.02720	-.00360	.00510	-.00010	.18340	.00170	.09940	.18460	.53640
1.249	2.810	.19750	-.09060	-.00510	.00570	-.00020	.18590	.00330	.18810	.19540	.96260
1.249	4.940	.28100	-.14500	-.00520	.00600	-.00010	.18570	.00390	.26400	.20920	1.26170
1.249	7.030	.35010	-.19120	-.00590	.00620	.00000	.18070	.00160	.32530	.22230	1.46310
1.249	9.140	.40260	-.22490	-.00760	.00610	-.00010	.17760	.00290	.36930	.23930	1.54270
1.249	.680	.11660	-.03690	-.00370	.00490	-.00040	.18600	.00280	.11430	.18740	.61000
GRADIENT		.04824	-.03162	-.00040	.00025	-.00003	.00046	.00018	.04288	.00085	.21266

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